

Application No. 10/017,973  
Amendment dated January 12,2004  
In Reply to Final Office Action of November 17,2003

MTS-520US5

**Amendments to the Drawings:**

The attached sheets of drawings include changes to Figures 1-42. These drawings replace the original sheets.

Attachments

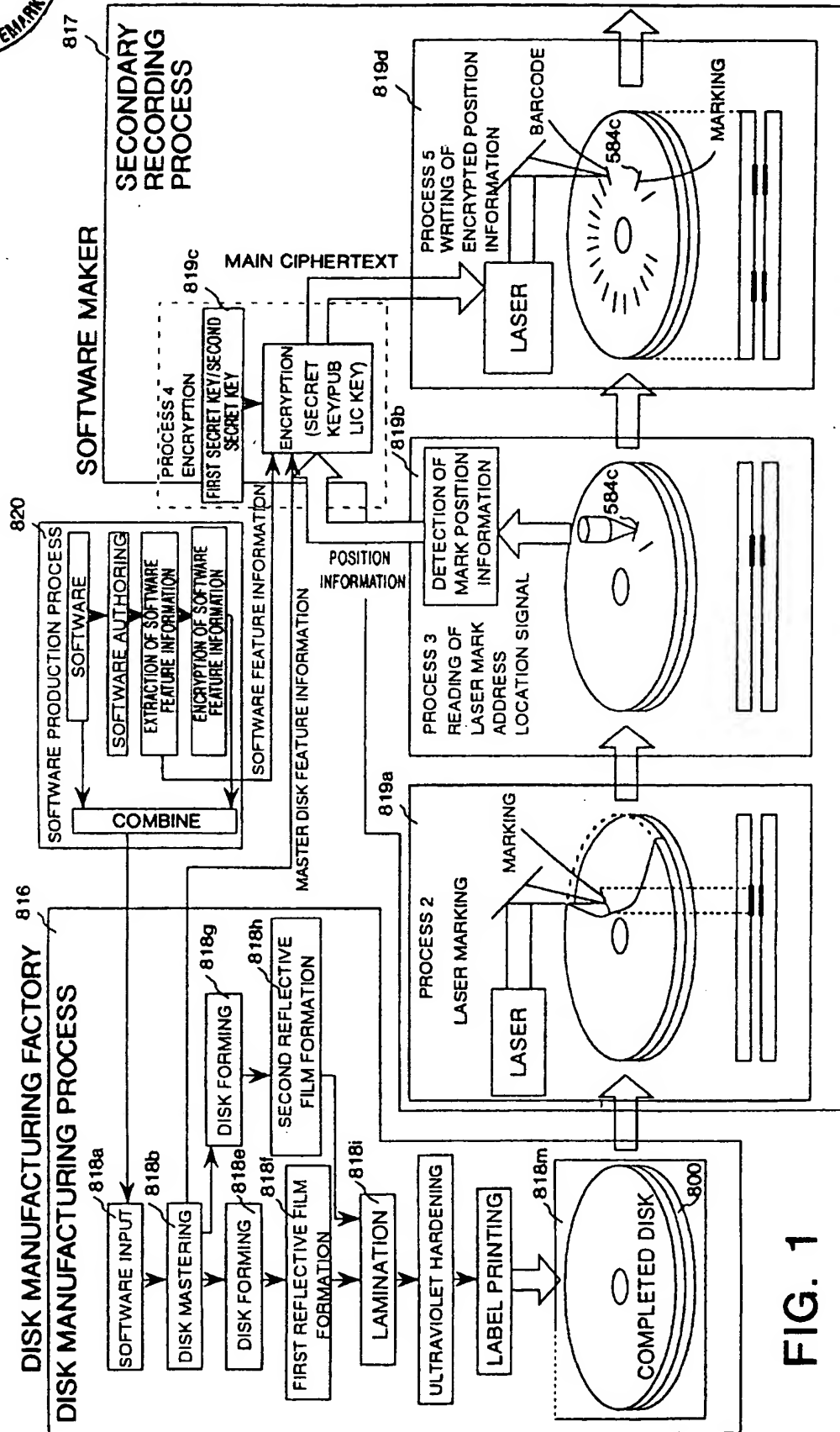
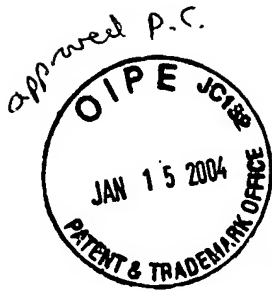


FIG. 1

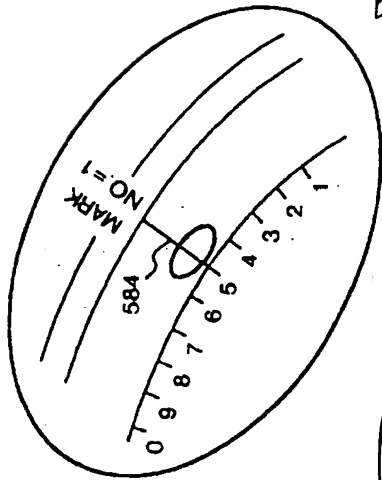
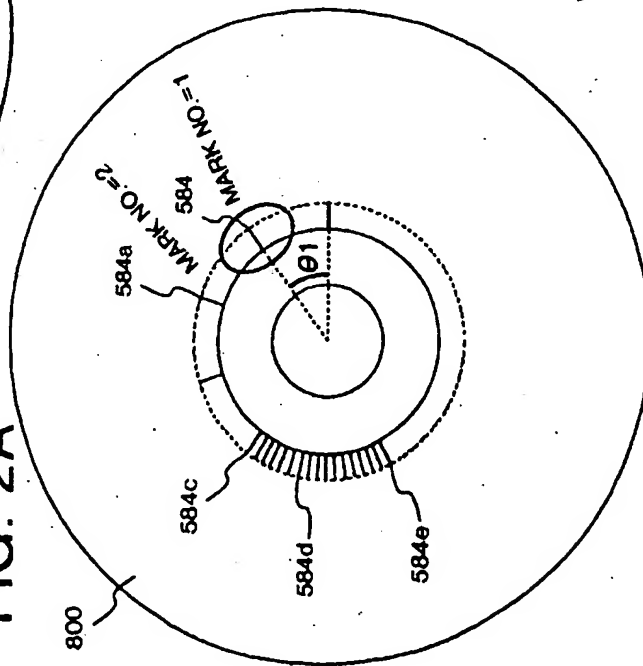


FIG. 2B

FIG. 2A



NONREFLECTIVE PITS ARE  
FORMED IN RADIAL DIRECTION

FIG. 2C

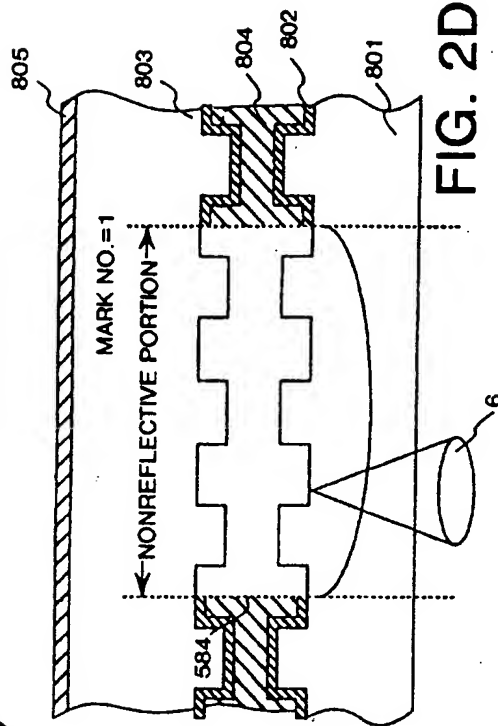
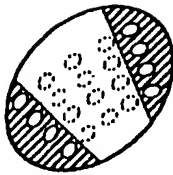
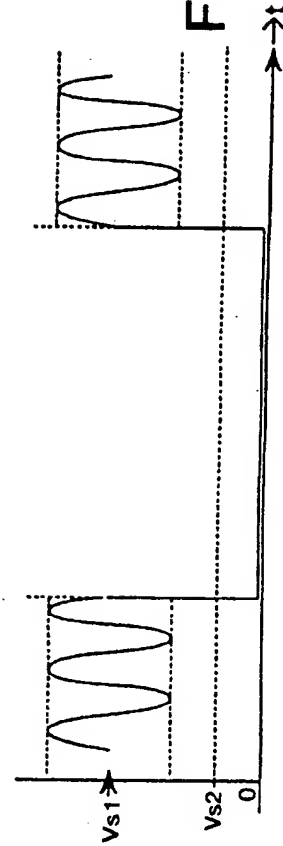


FIG. 2D



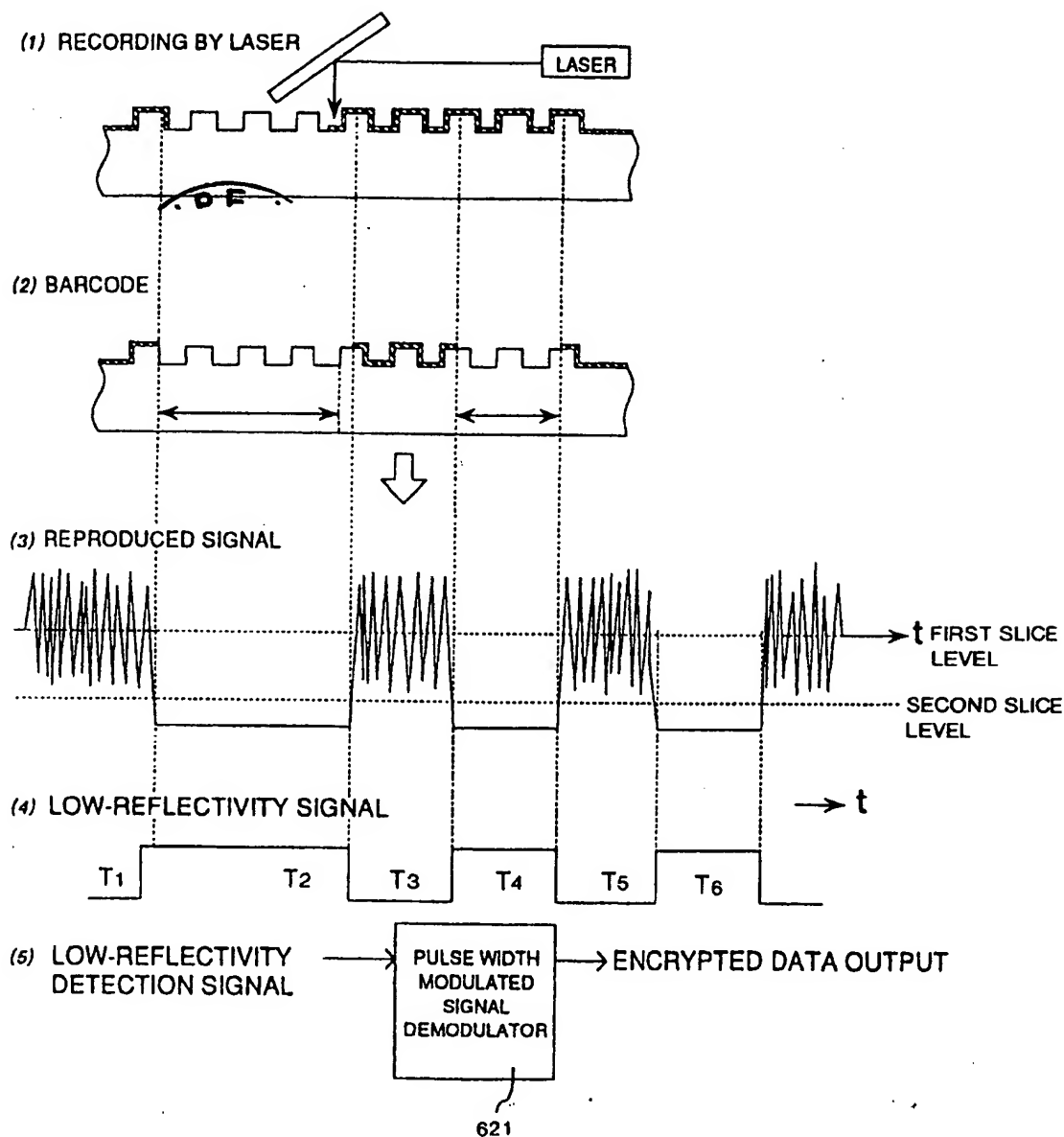


FIG. 3

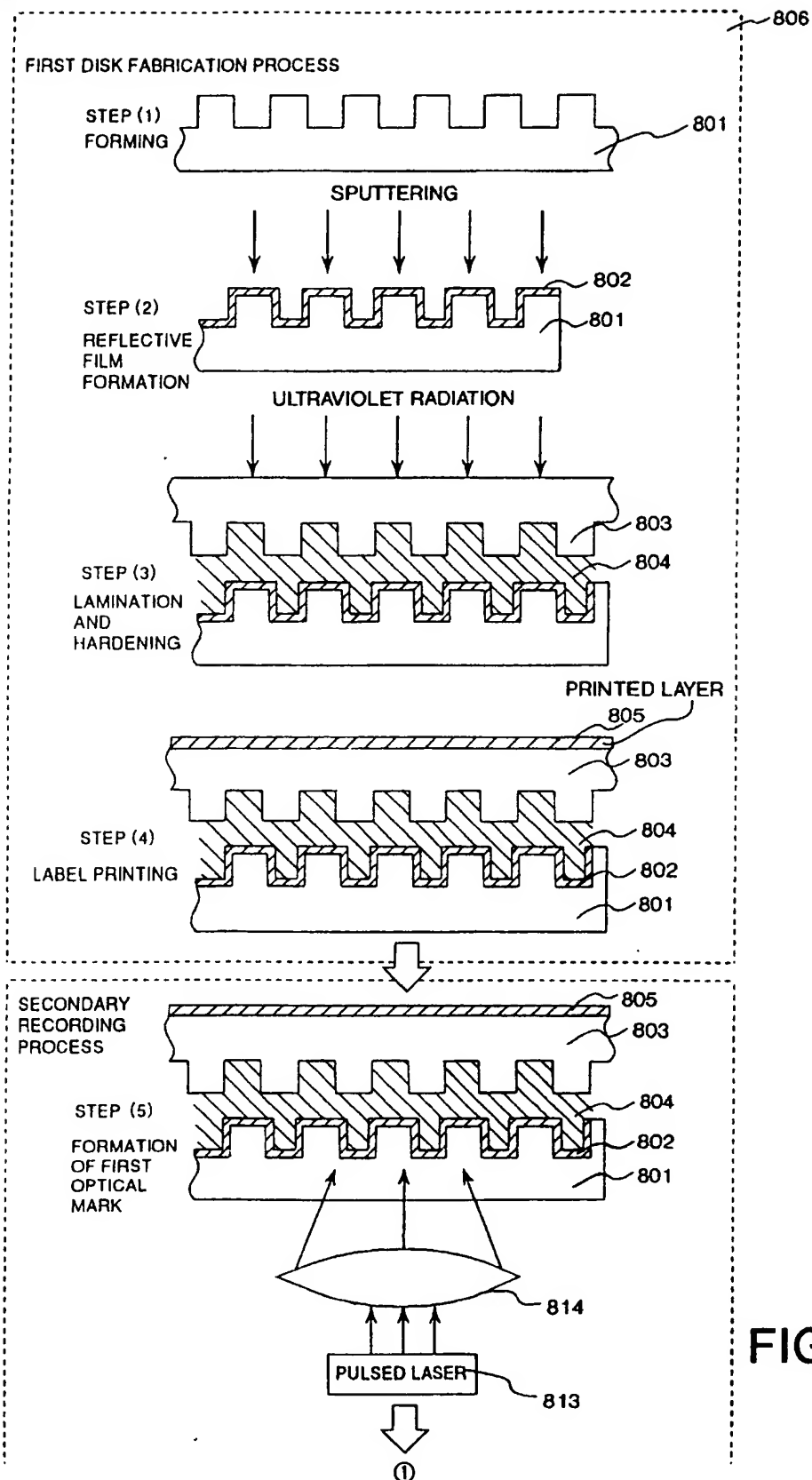
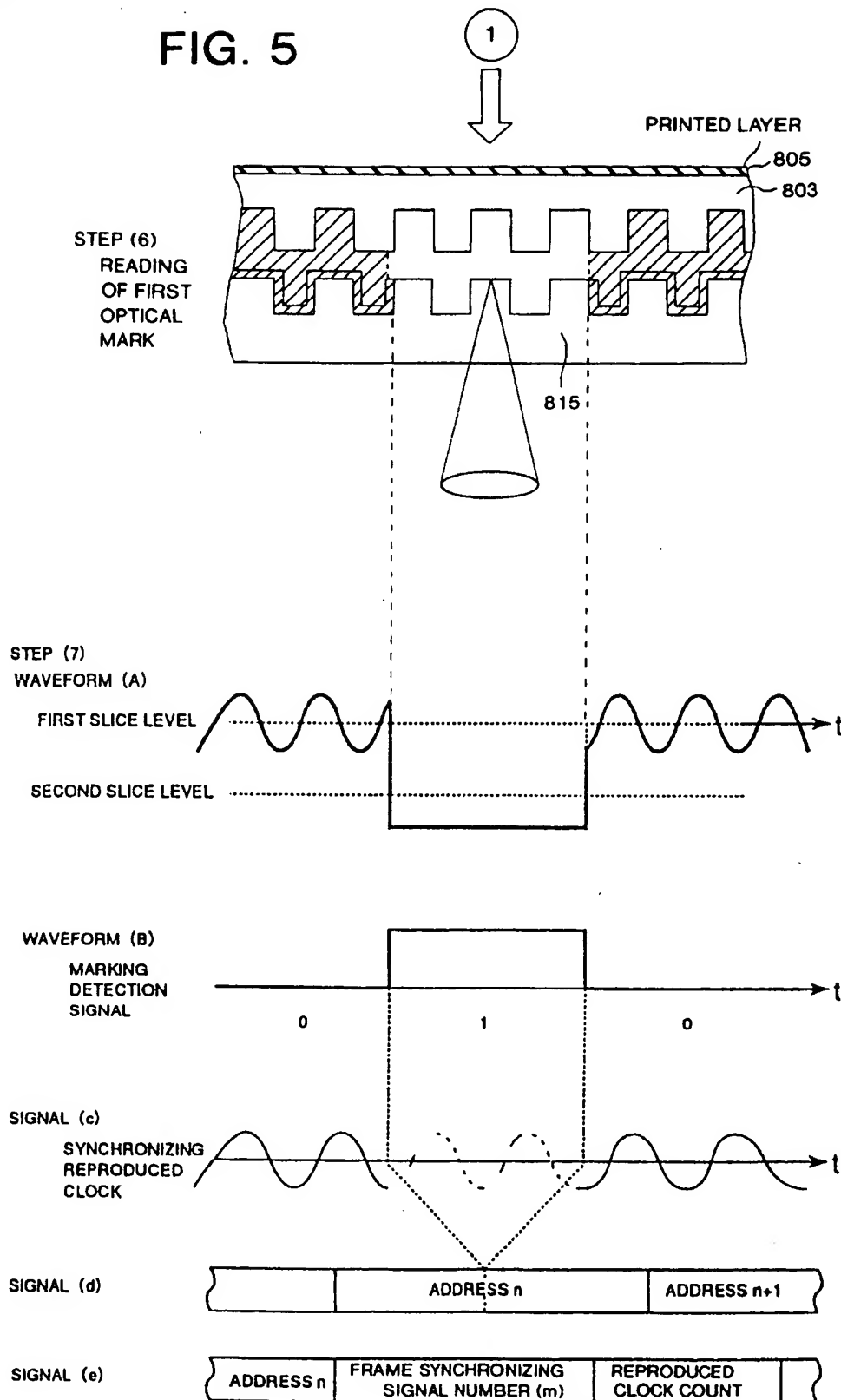


FIG. 4



FIG. 5



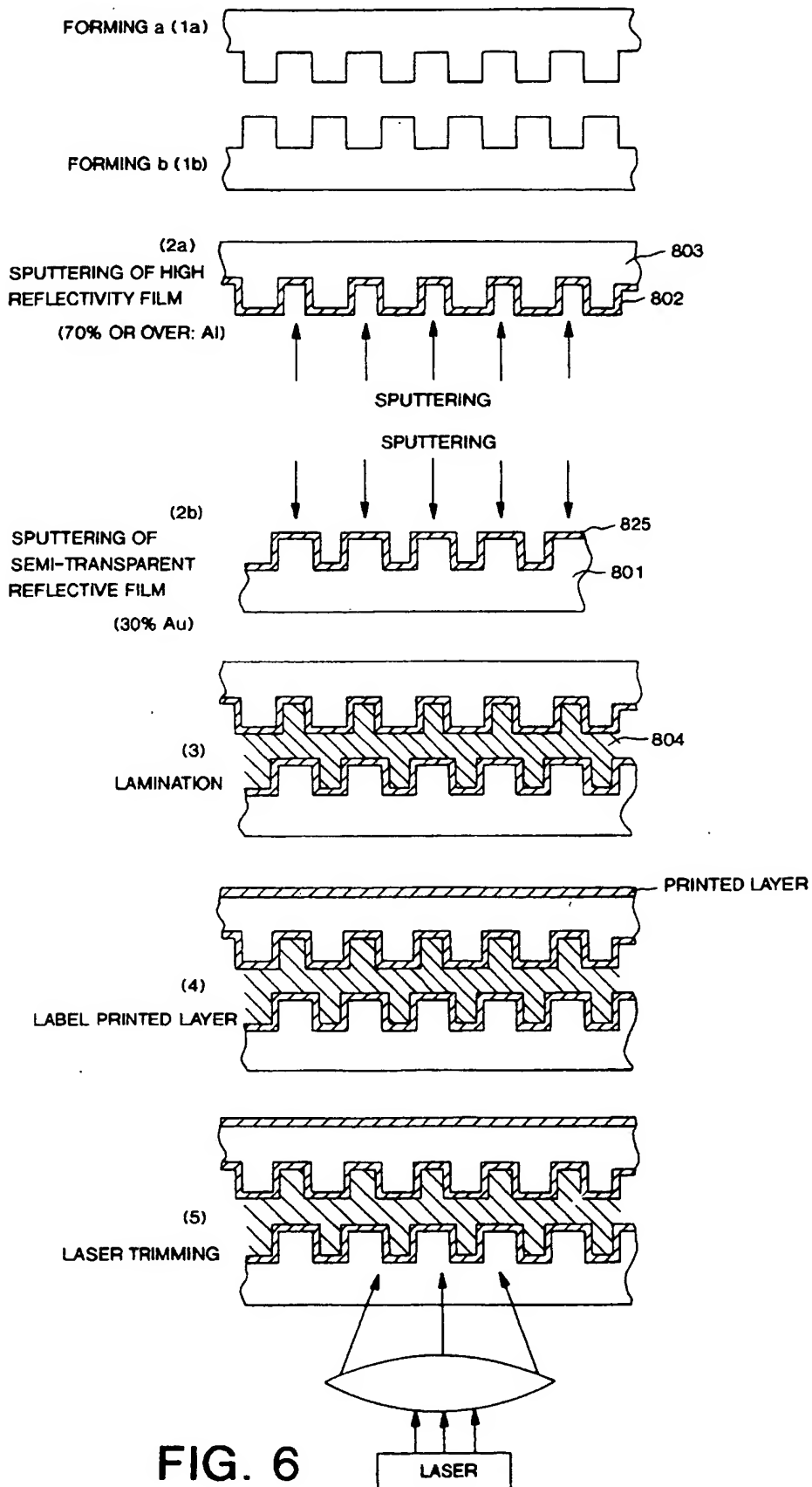


FIG. 6

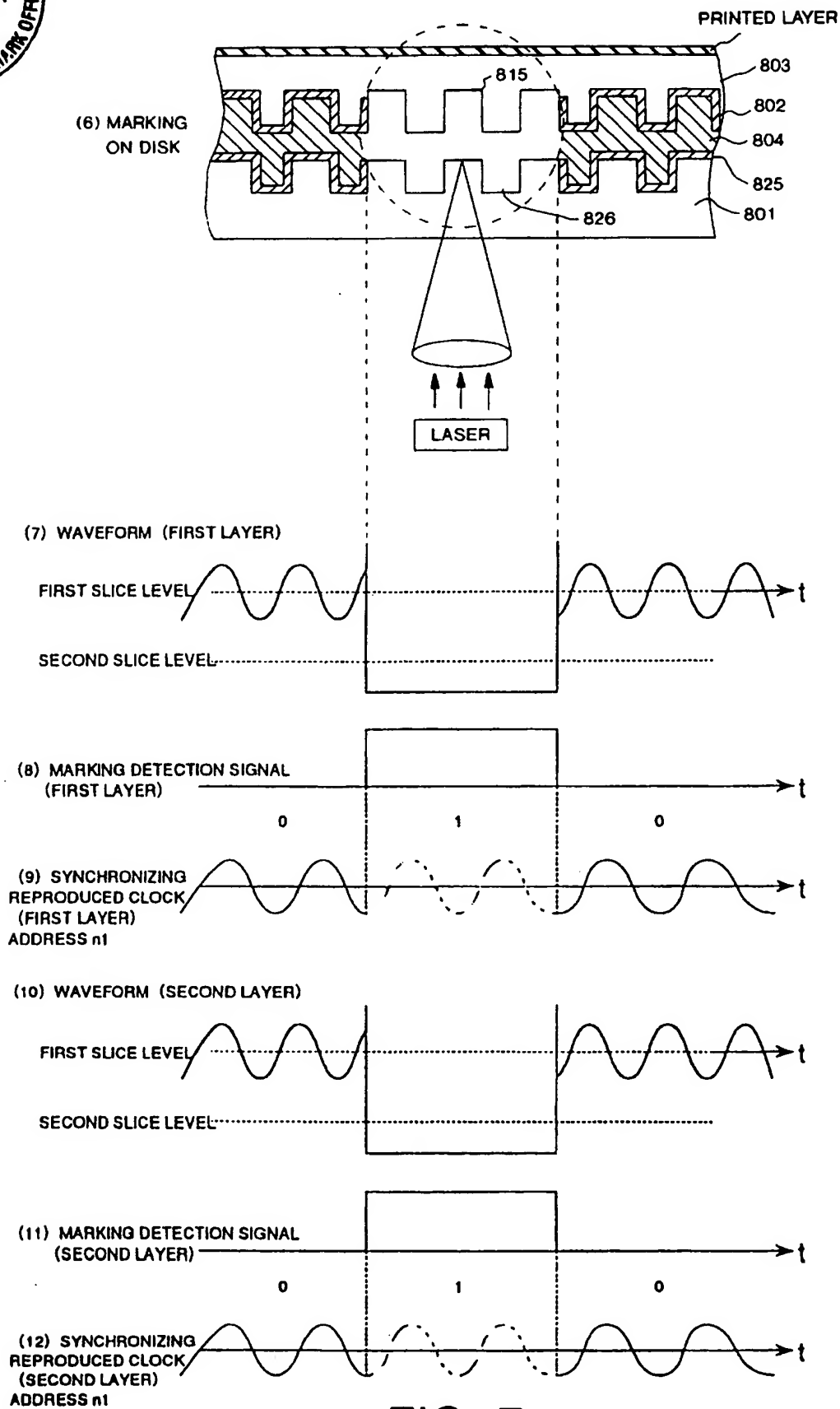


FIG. 7



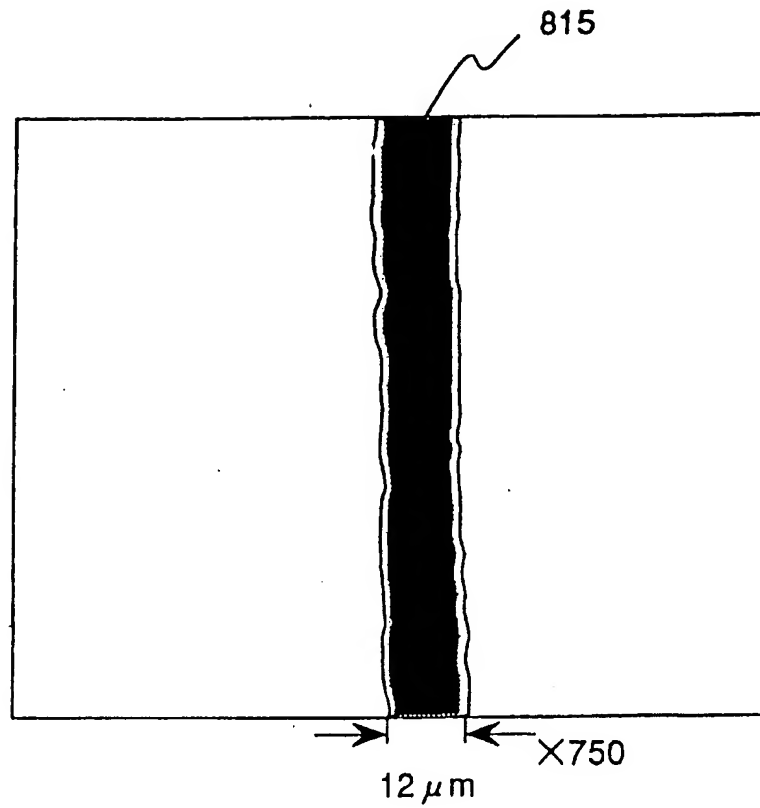


FIG. 8A

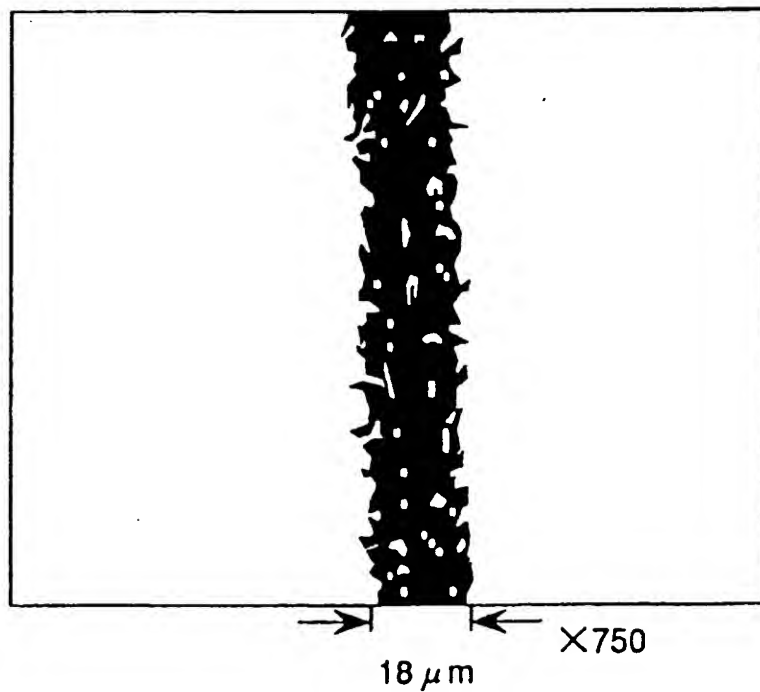
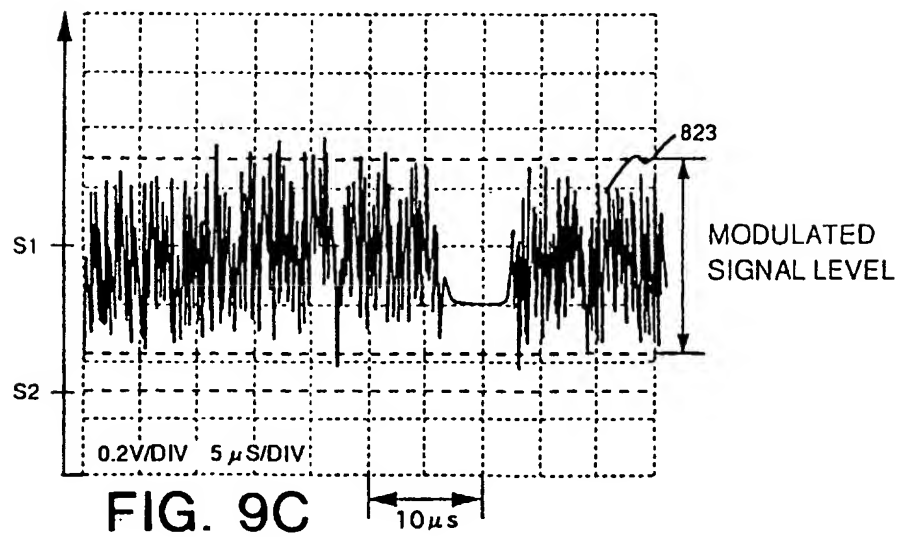
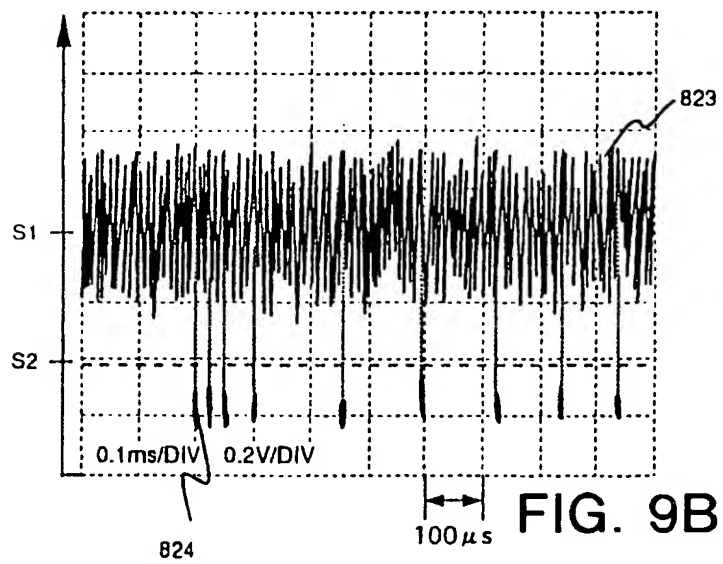
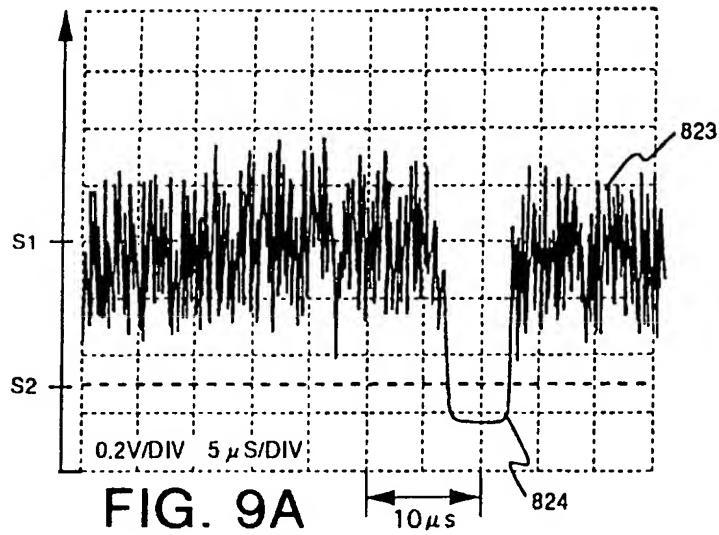


FIG. 8B



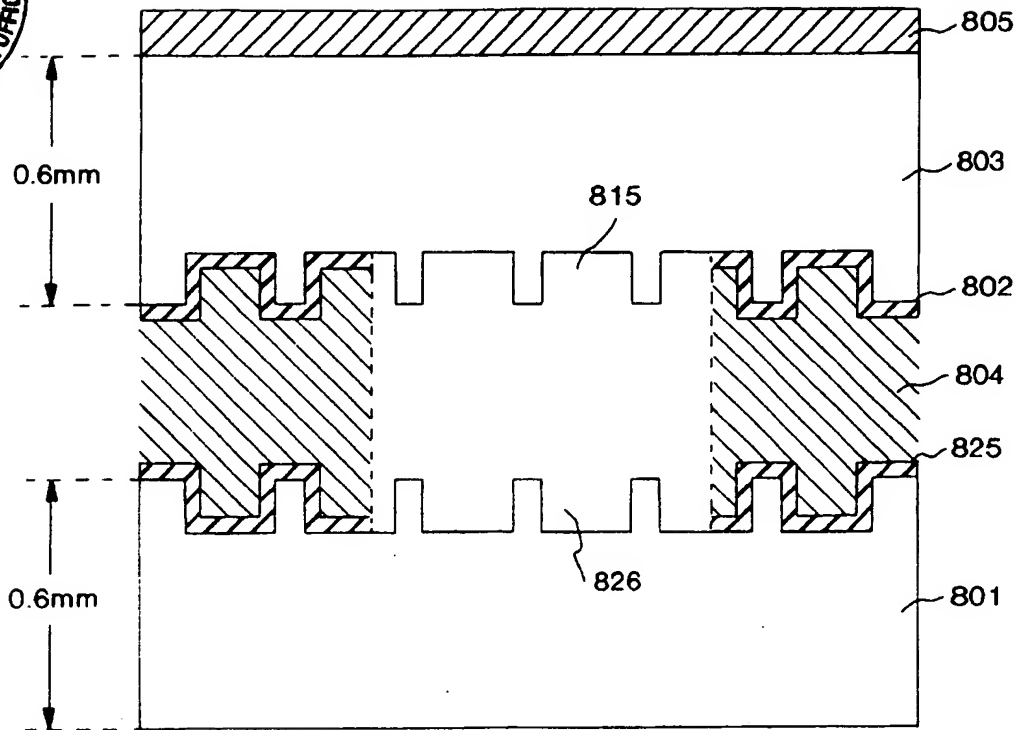


FIG. 10A

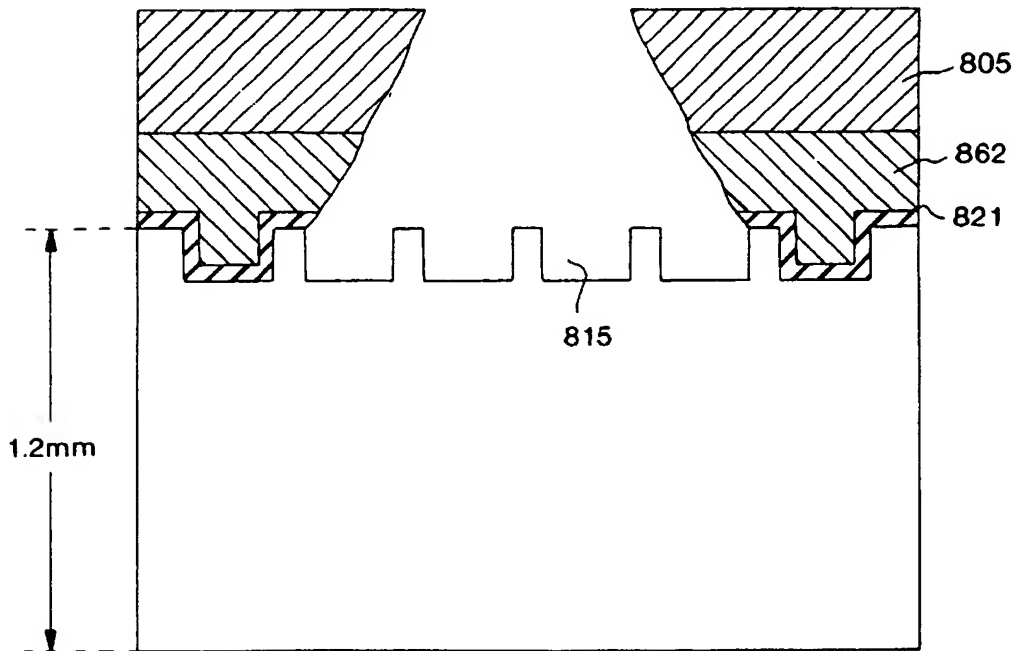


FIG. 10B

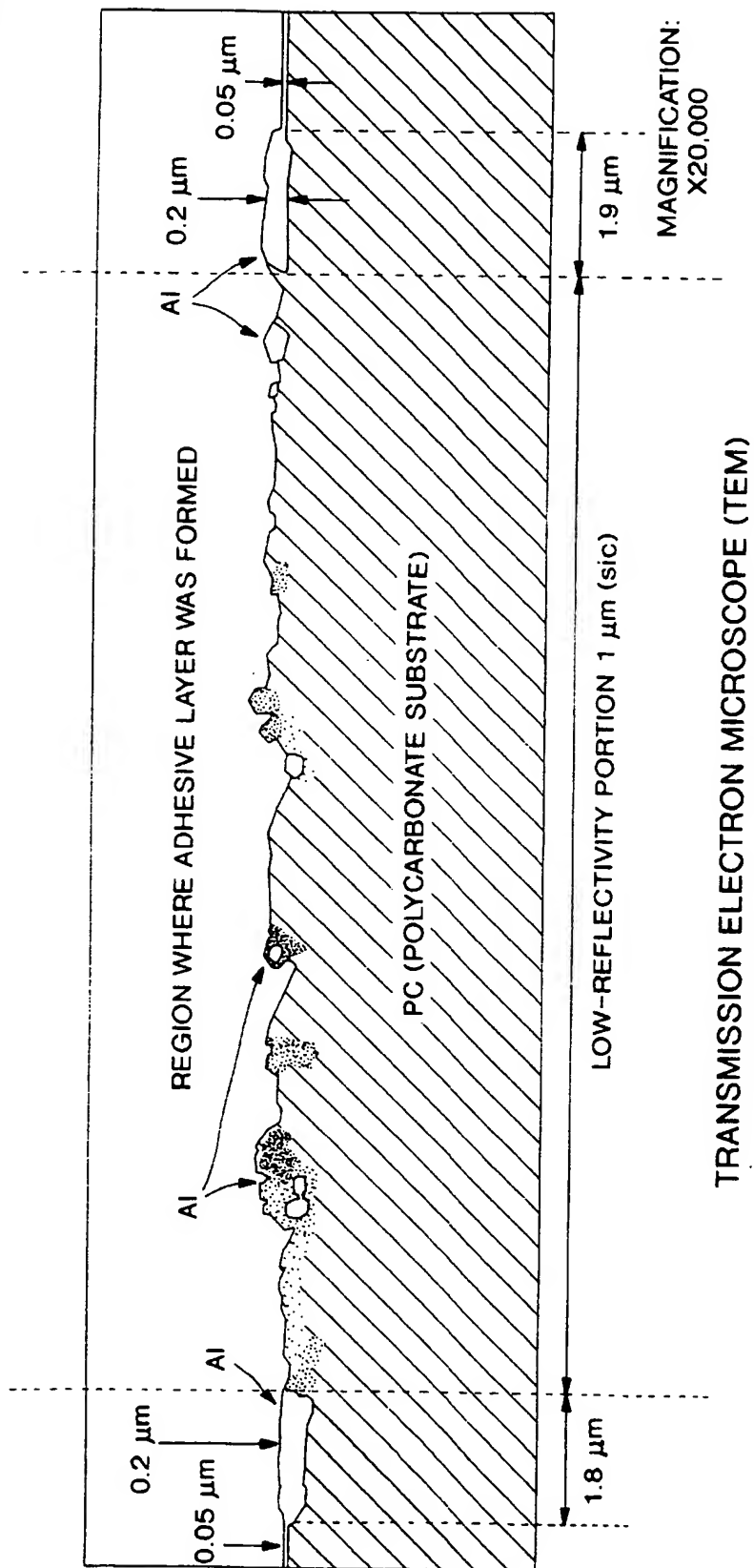


FIG. 11

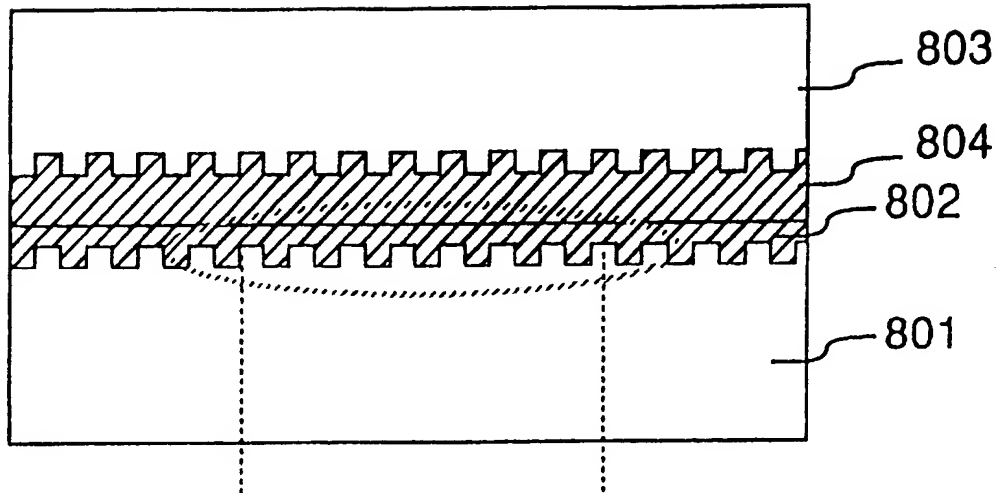


FIG. 12A

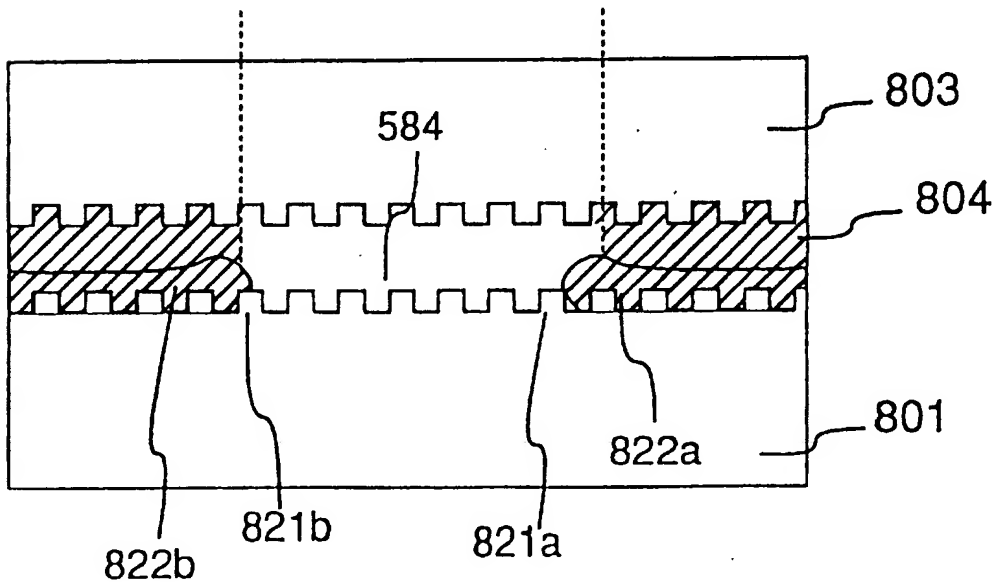
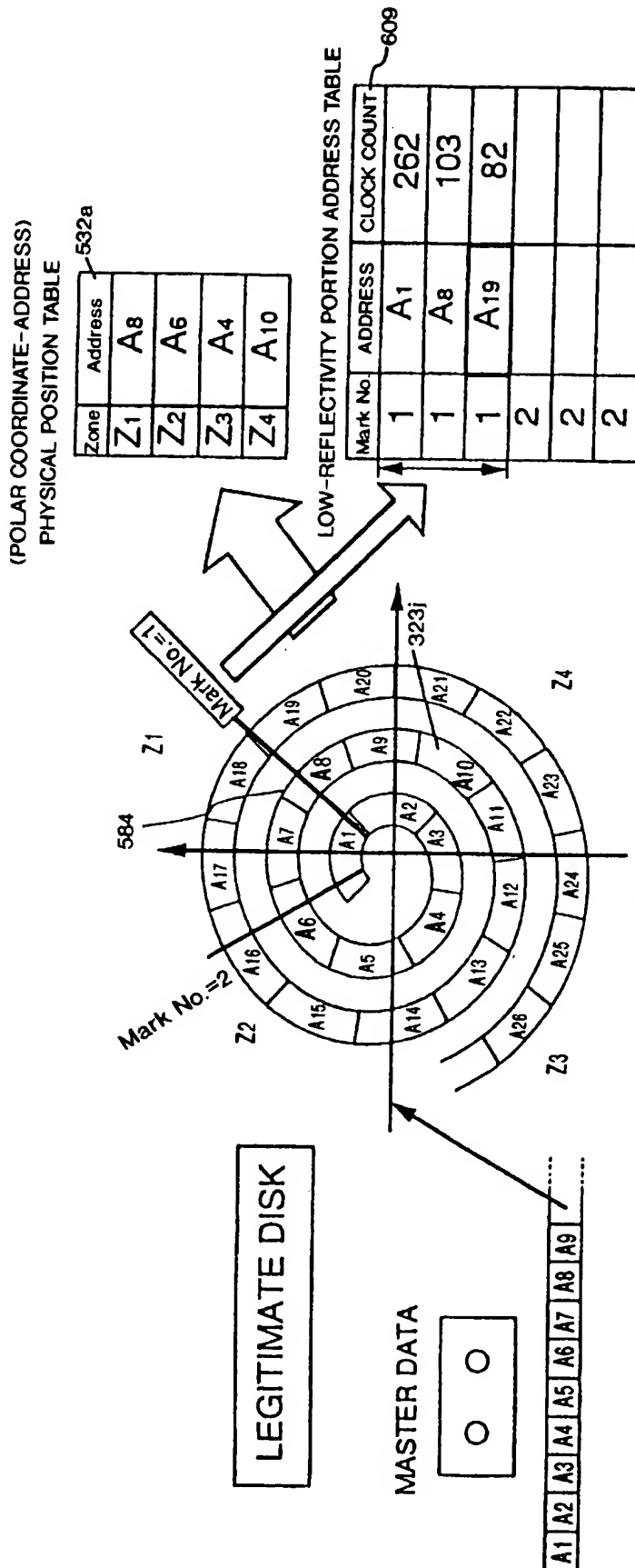
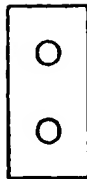


FIG. 12B





MASTER DATA



A1 A2 A3 A4 A5 A6 A7 A8 A9

ILLEGALLY DUPLICATED CD

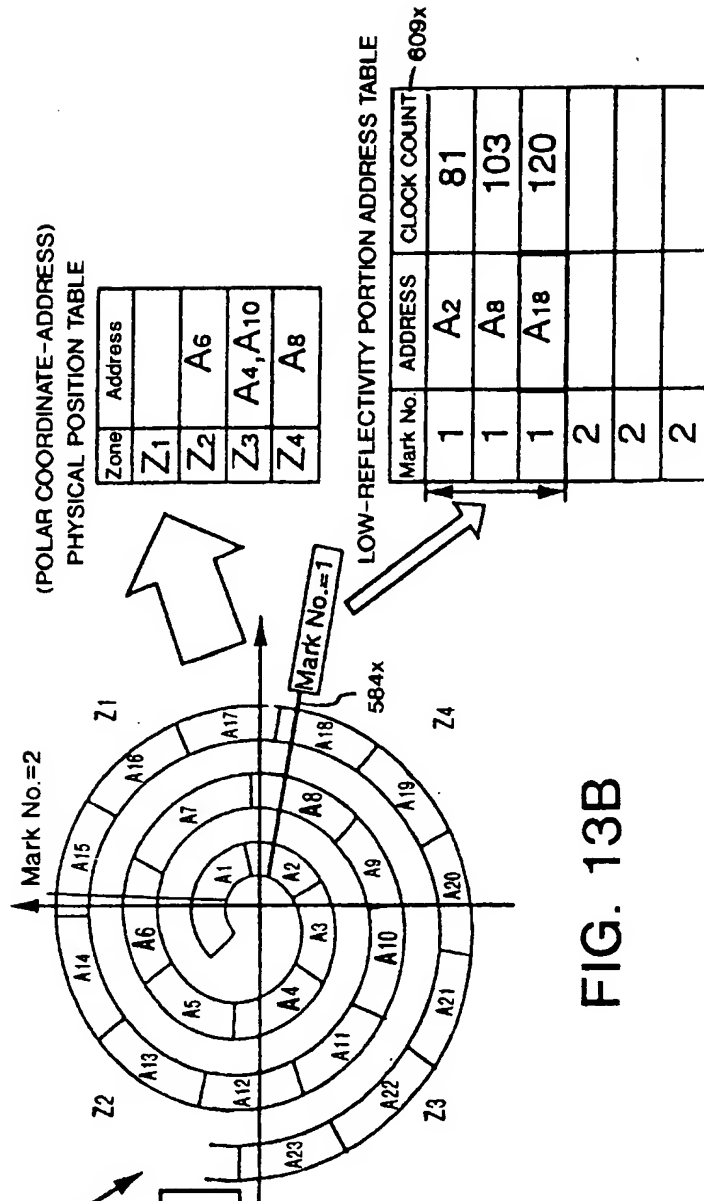


FIG. 13B

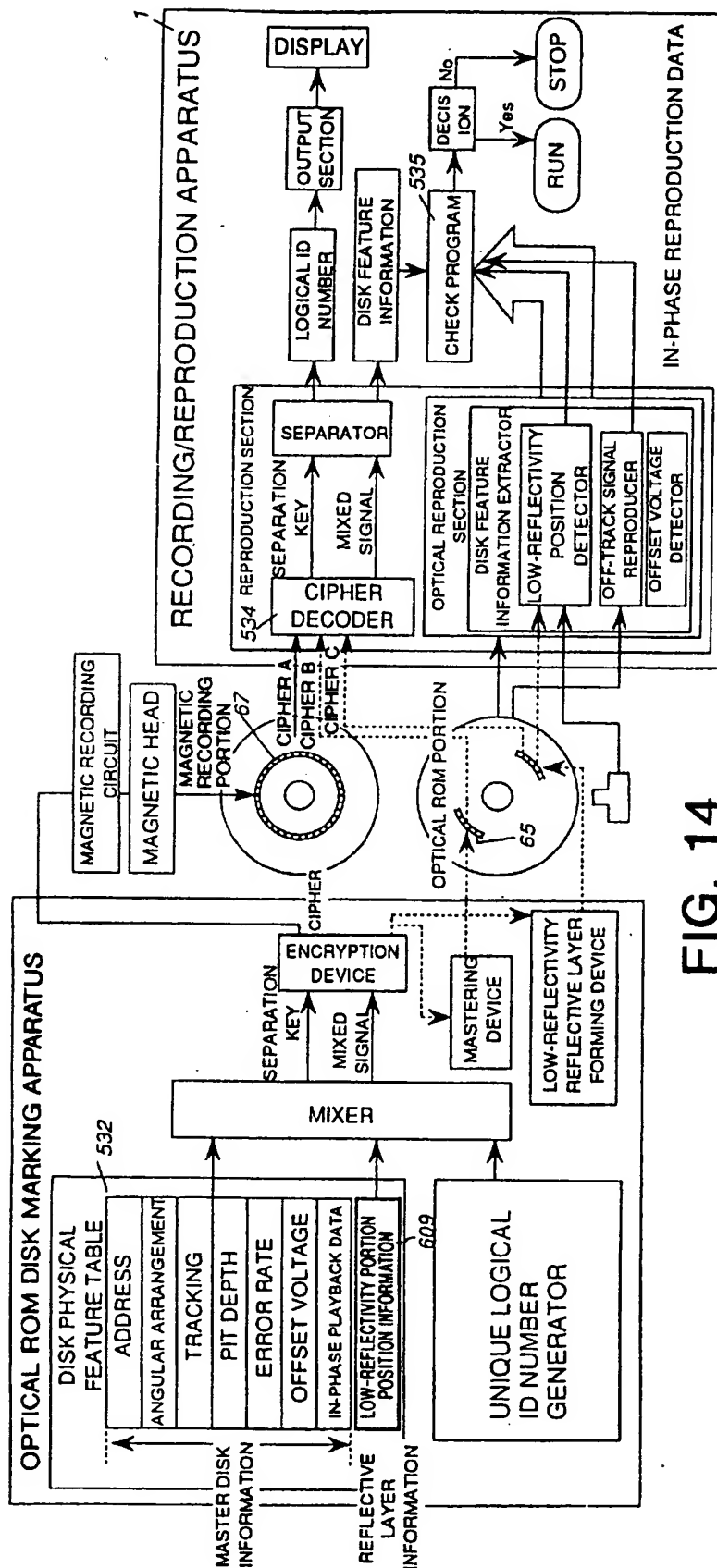


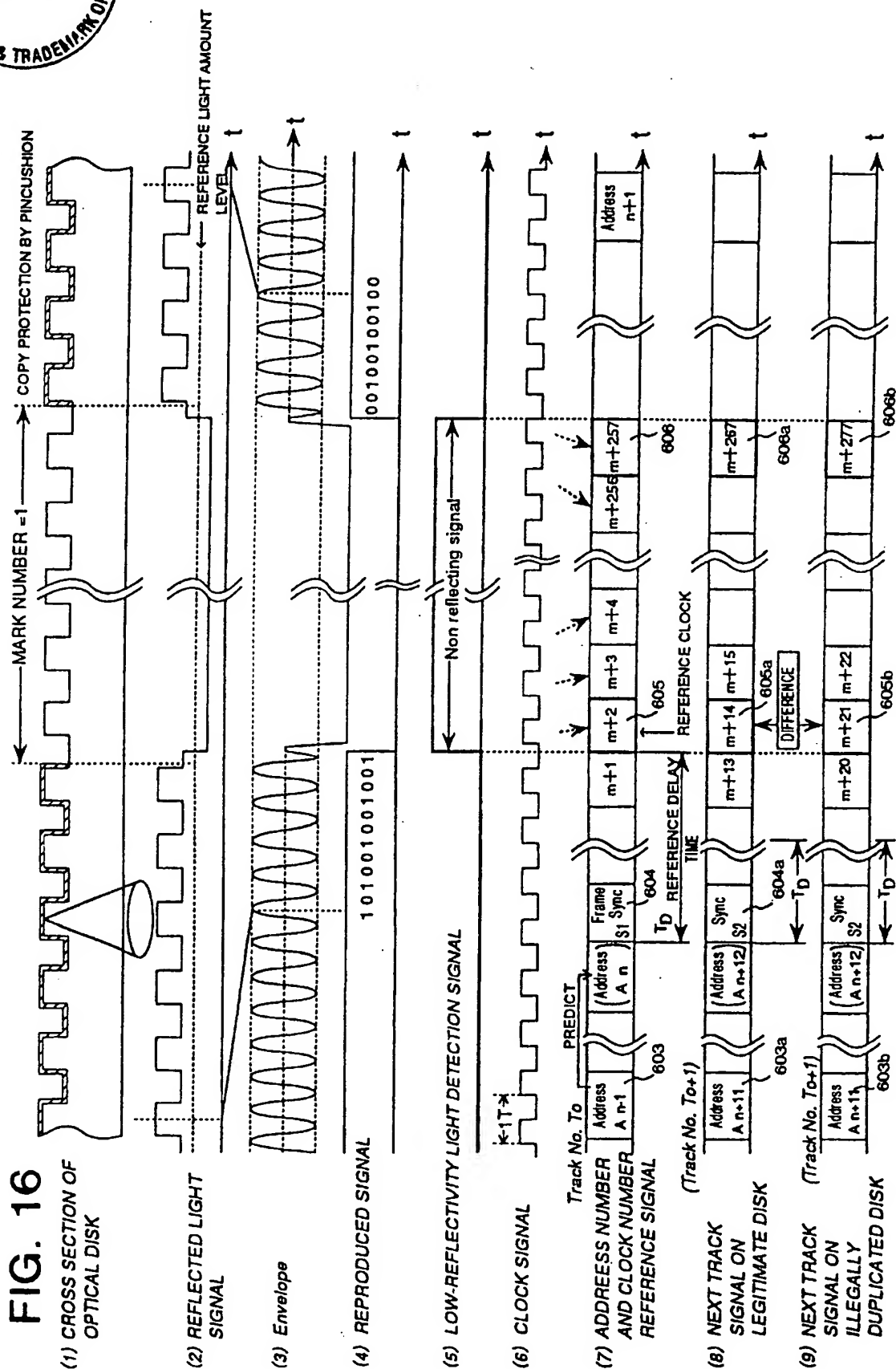
FIG. 14







**FIG. 16**





LEGITIMATE DISK

LOW-REFLECTIVITY PORTION ADDRESS TABLE

609

MARK NO.	START POSITION			END POSITION		
	ADDRESS	Sync No	CLOCK NUMBER	ADDRESS	Sync No	CLOCK NUMBER
1	A n	S <sub>1</sub>	m+2	n		m+257
1	A n+12	S <sub>2</sub>	m+14	n+12		m+267
1	A n+23		m+25	n+23		m+300
:	:		:	:		:
2	A n+1		m+15	n+1		m+160
2	A n+13		m+85	n+13		m+250
2	A n+24		m+68	n+24		m+210
10	A n+9					
10						

PLANNING

ILLEGALLY DUPLICATED DISK

LOW-REFLECTIVITY PORTION ADDRESS TABLE

609x

MARK NO.	START POSITION			END POSITION		
	ADDRESS	Sync No	CLOCK NUMBER	ADDRESS	Sync No	CLOCK NUMBER
1	n	S <sub>1</sub>	m+2	n		m+257
1	n+12	S <sub>2</sub>	m+21	n+12		m+277
1	n+22		m+4	n+22		m+230
:	:		:	:		:
2	n+1		m+36	n+1		m+190
2	n+13		m+120	n+13		m+281
2	n+25			n+25		
10	n+9					
10						

FIG. 17

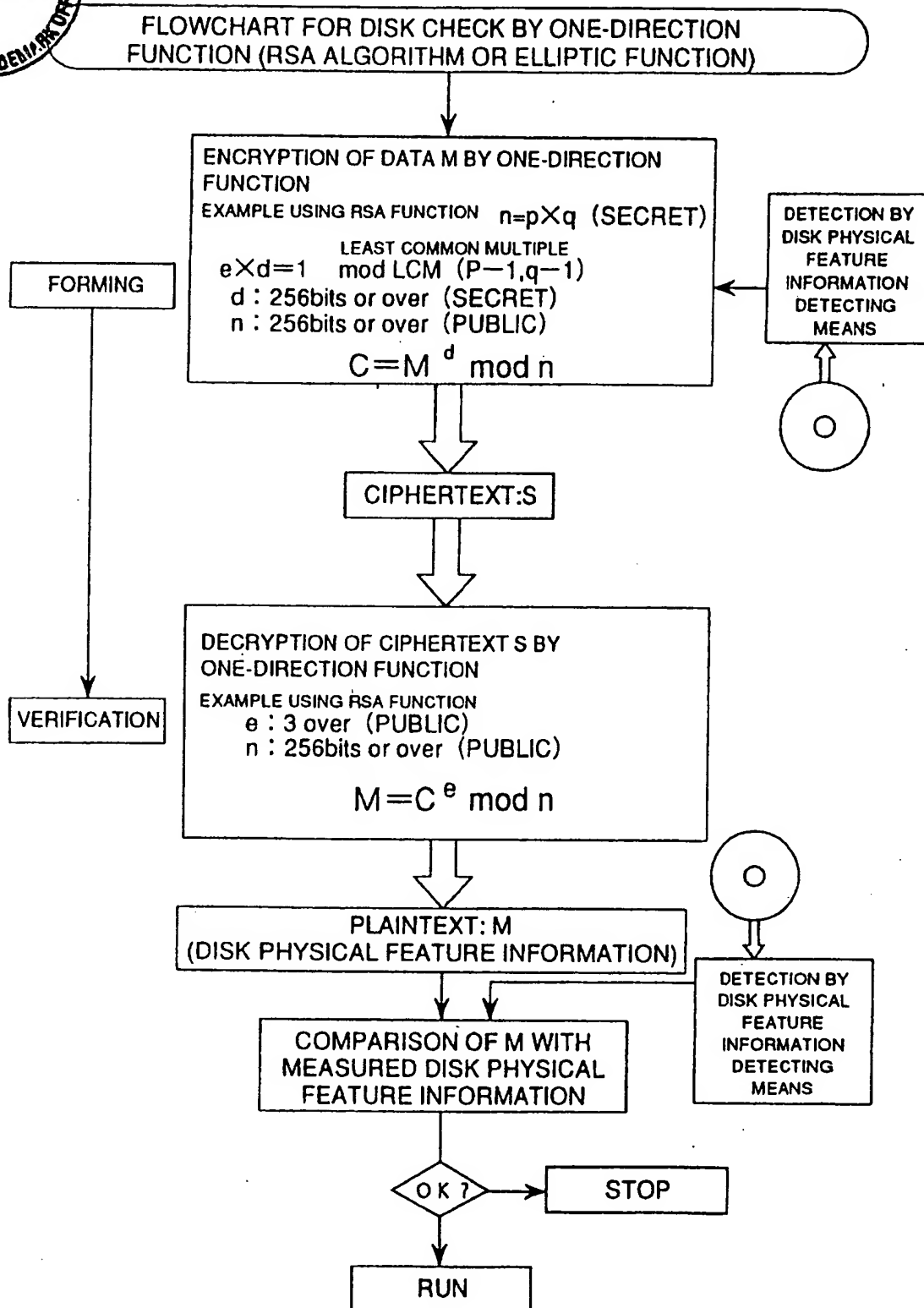
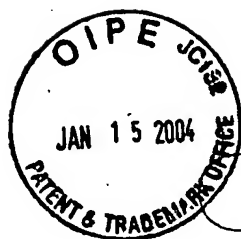


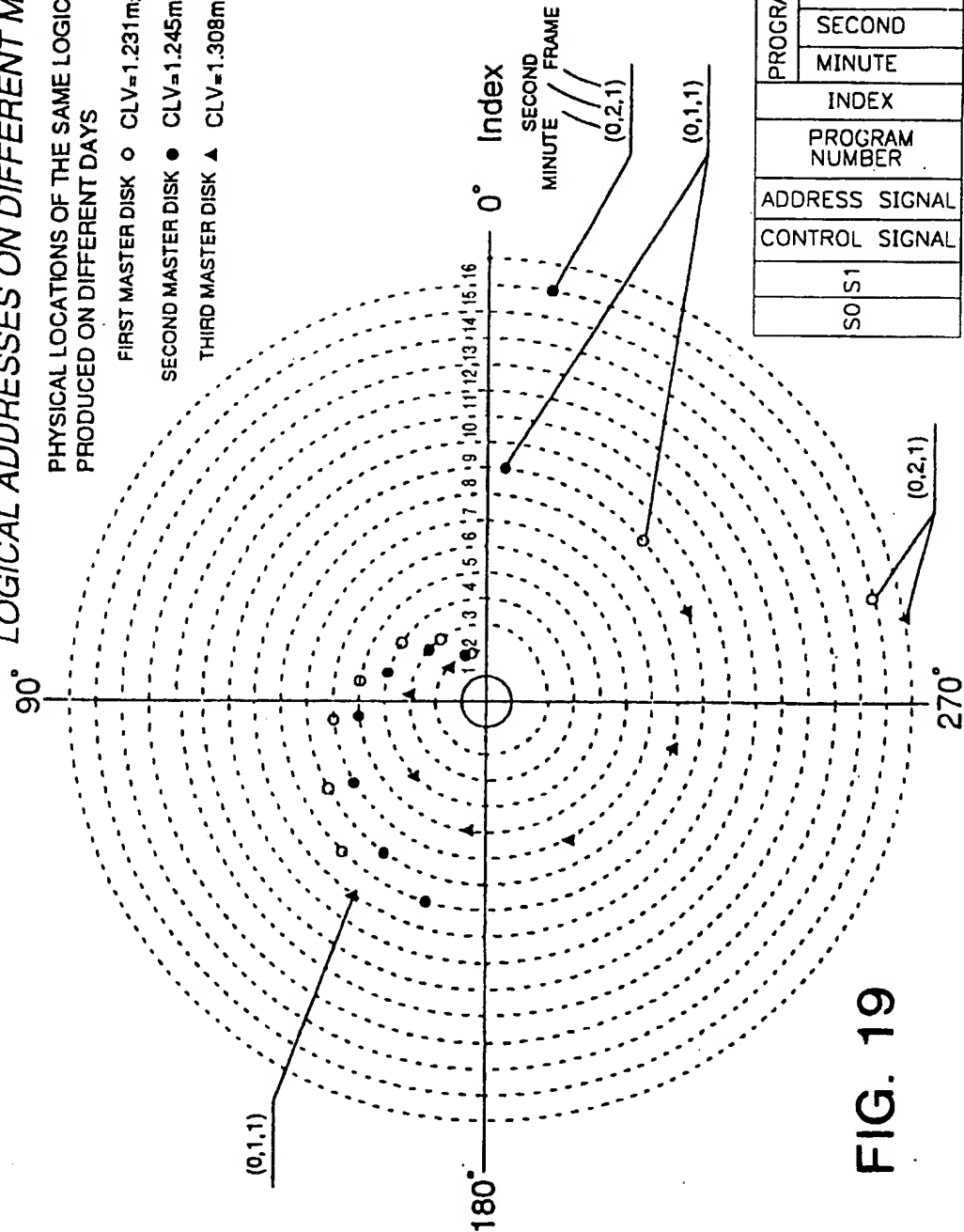
FIG. 18



DIAGRAM SHOWING DIFFERENT PHYSICAL LOCATIONS OF  
LOGICAL ADDRESSES ON DIFFERENT MASTER DISKS

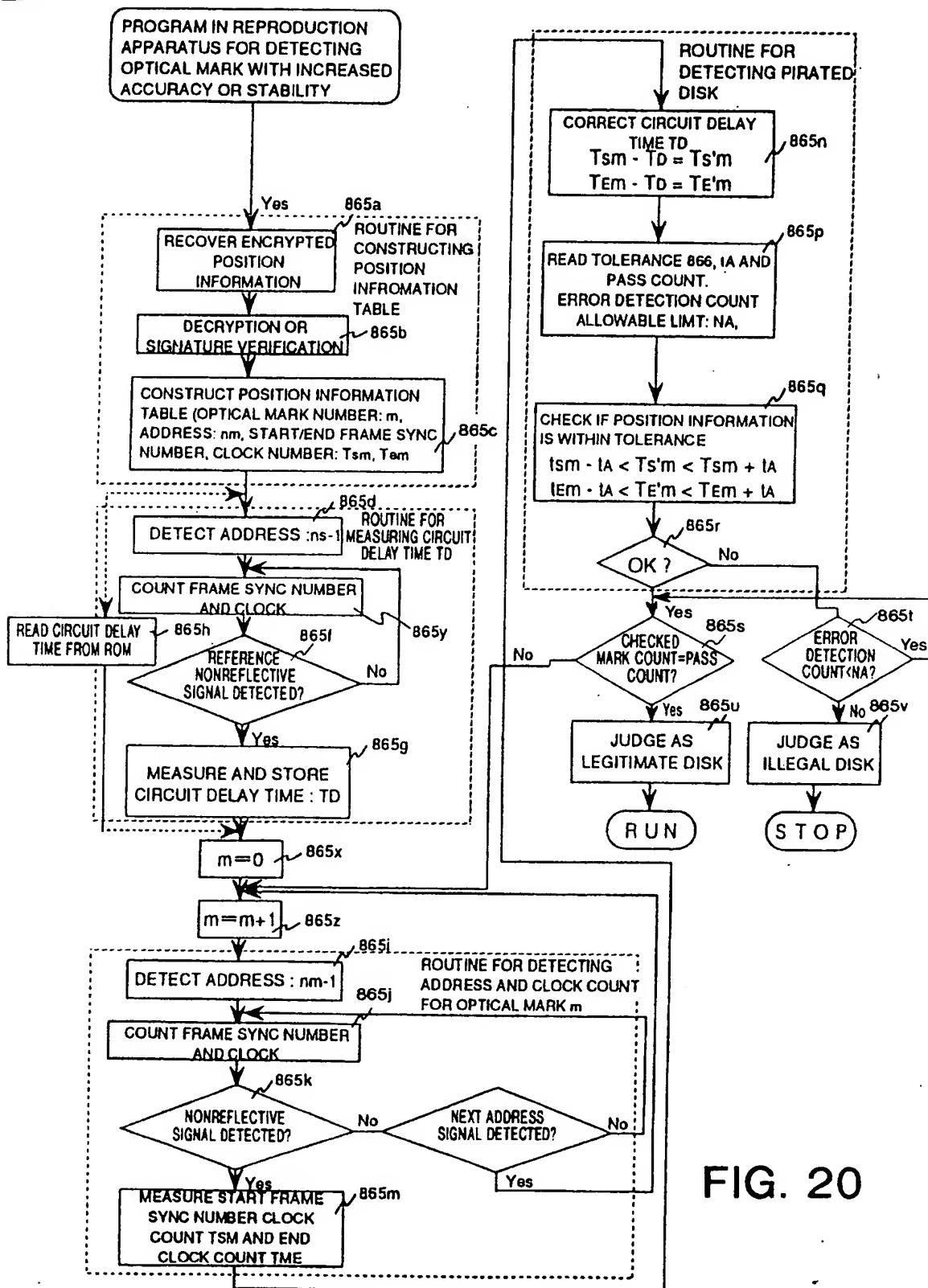
PHYSICAL LOCATIONS OF THE SAME LOGICAL ADDRESSES ON MASTER DISKS  
PRODUCED ON DIFFERENT DAYS

- FIRST MASTER DISK ○ CLV=1.231m/sec(SRC##2 MISI)  
SECOND MASTER DISK ● CLV=1.245m/sec(FZ-SJ1951A 3)  
THIRD MASTER DISK ▲ CLV=1.308m/sec(FZ-SJ1951AT 8)



ERROR-CORRECTING CODE CRCC	
TOTAL	SCC
	SECOND
	MINUTE
0	
PROGRAM	SCC
	SECOND
	MINUTE
INDEX	
PROGRAM NUMBER	
ADDRESS SIGNAL	
CONTROL SIGNAL	
S0 S1	

FIG. 19



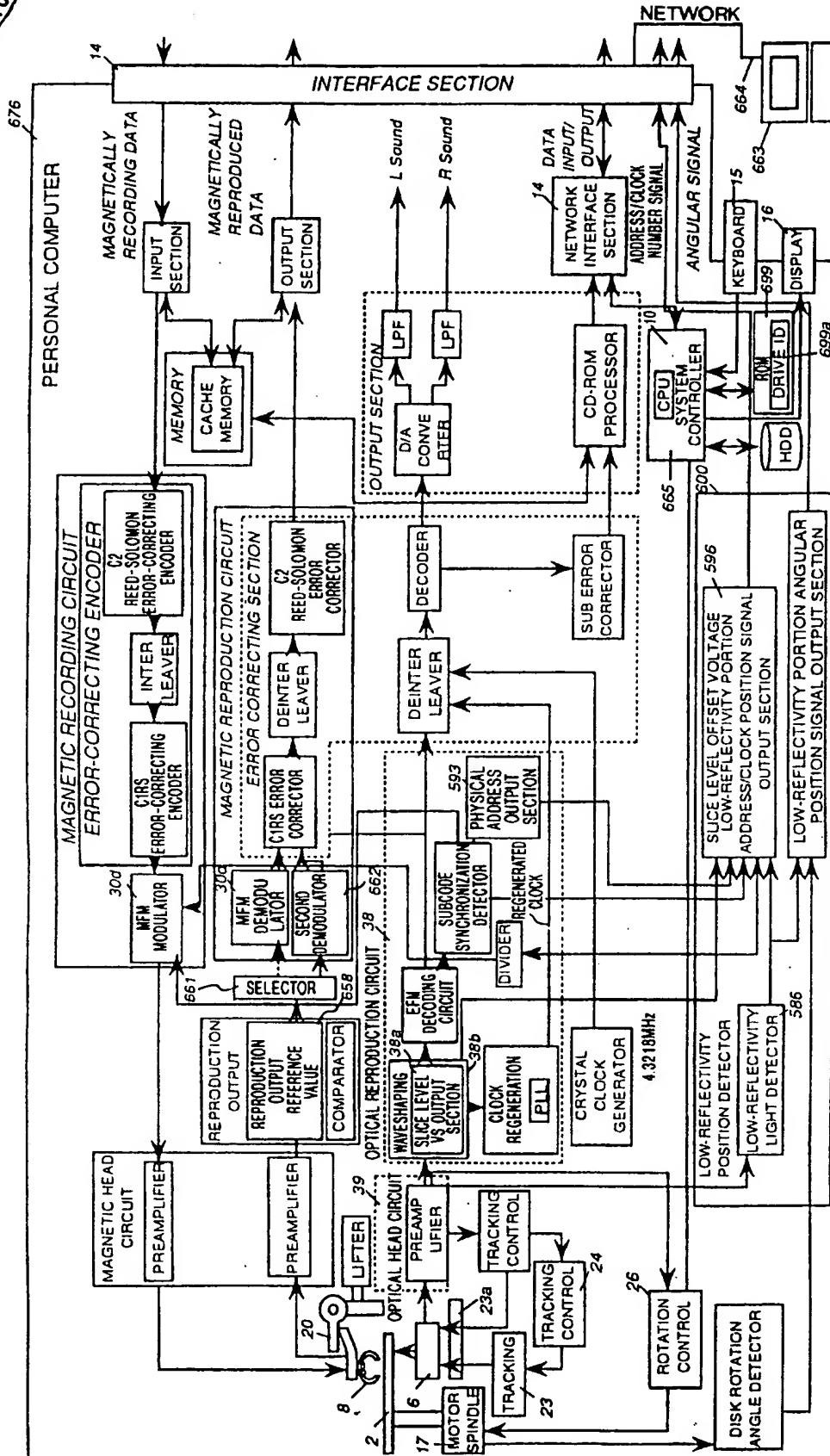


FIG. 21

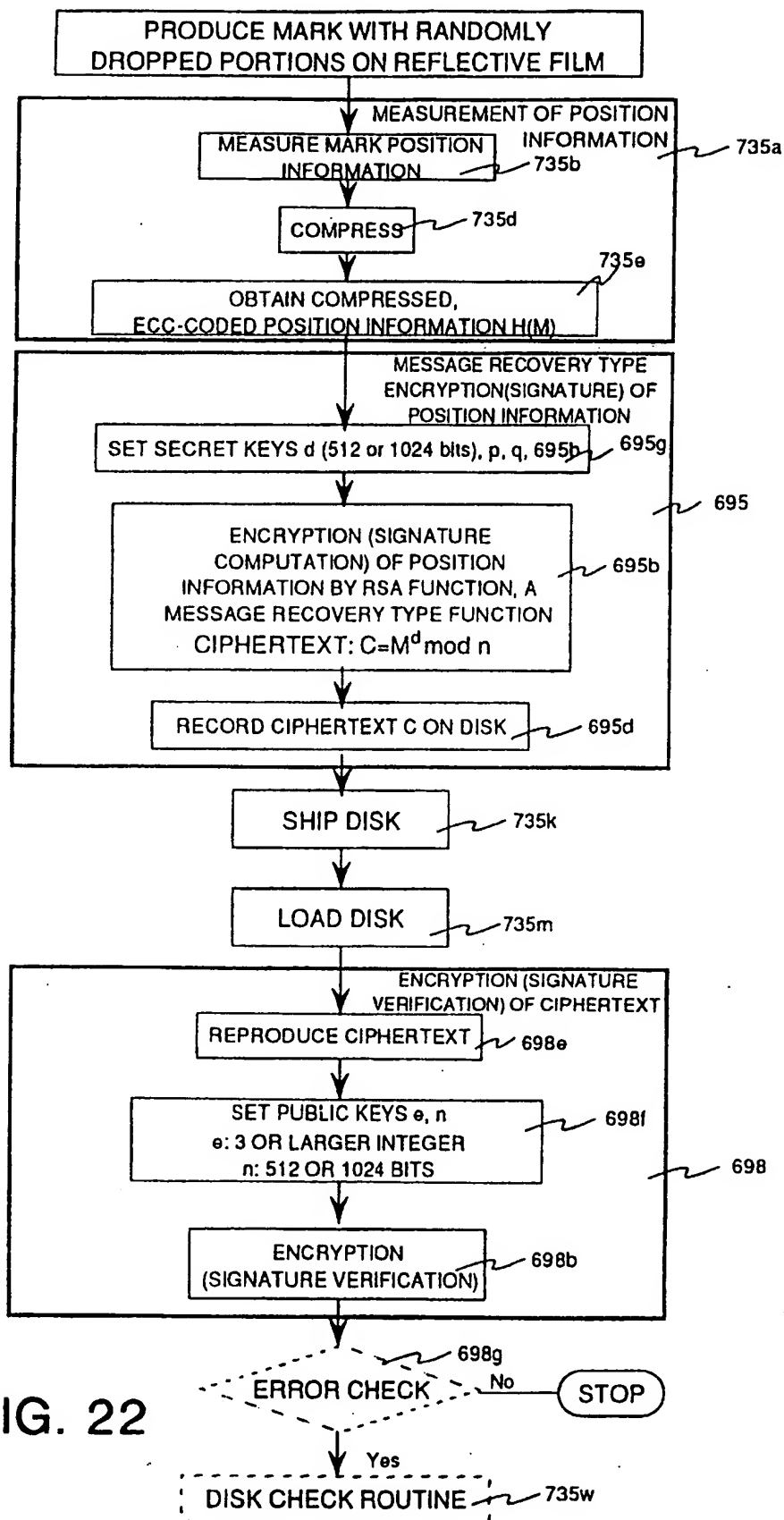
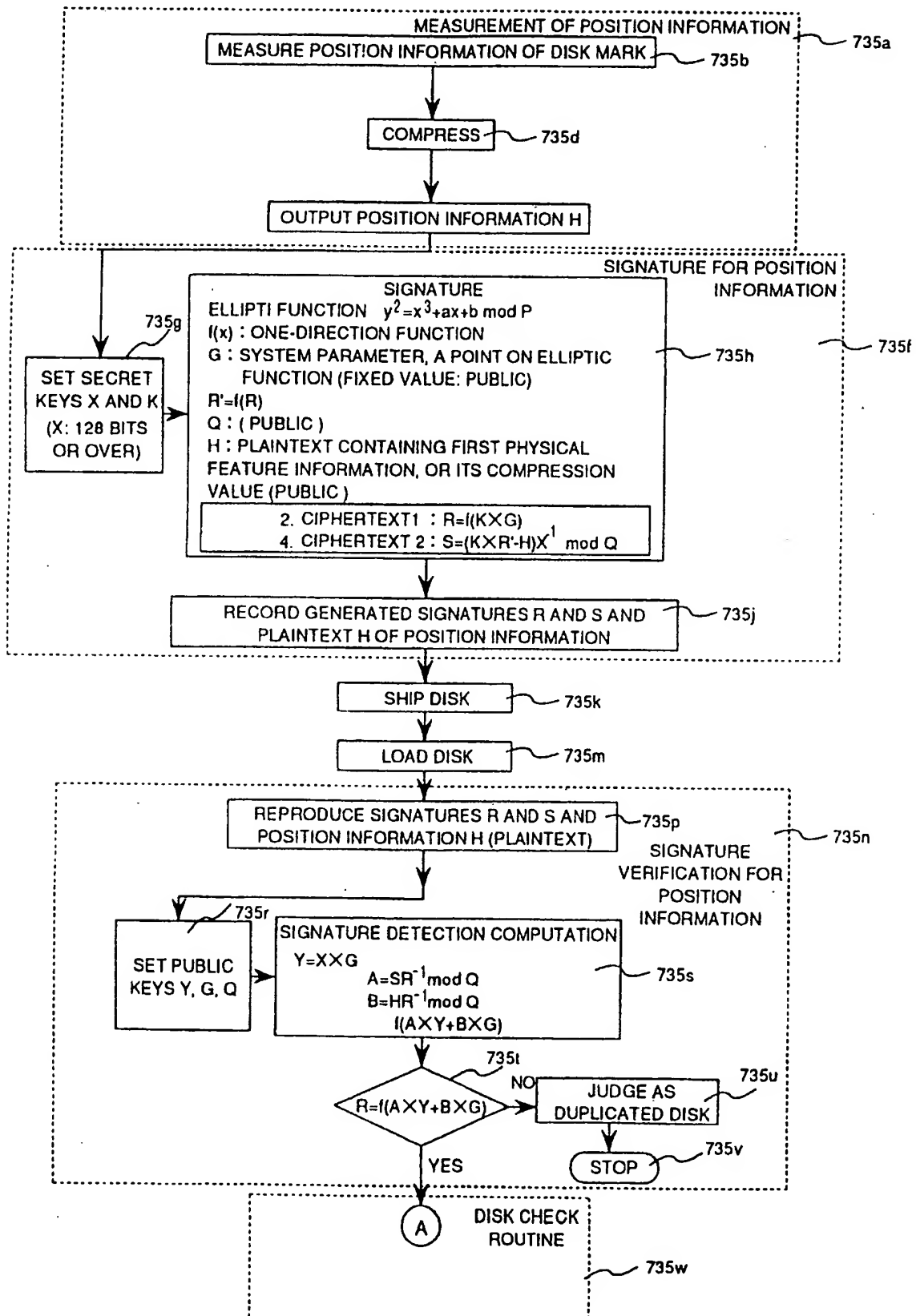


FIG. 22





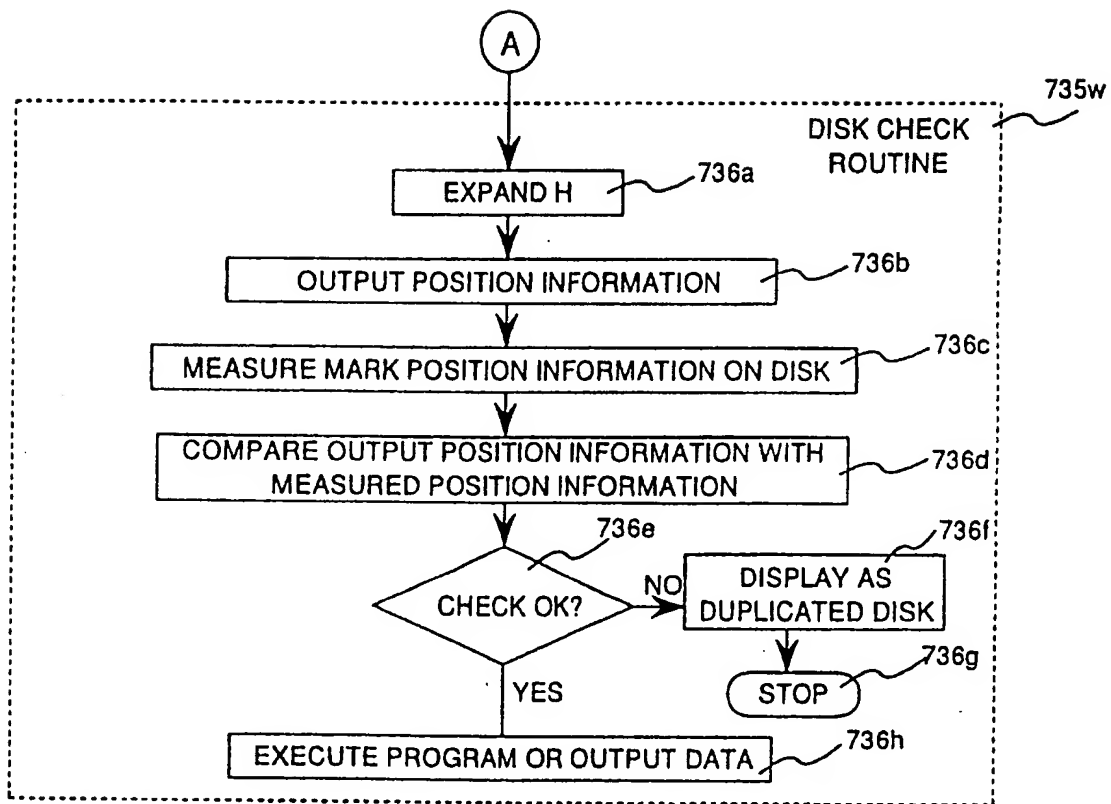
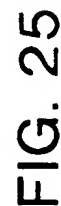
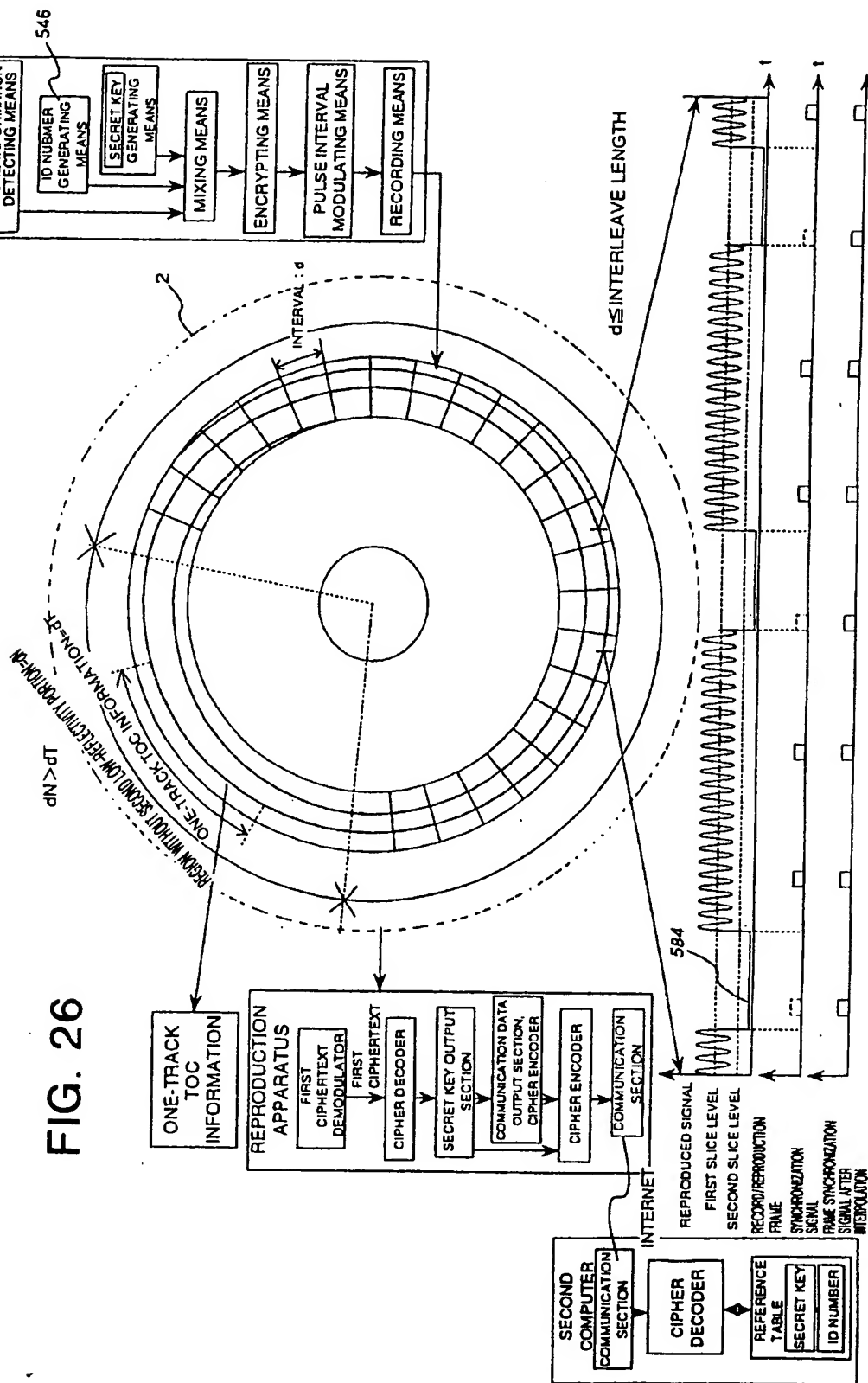
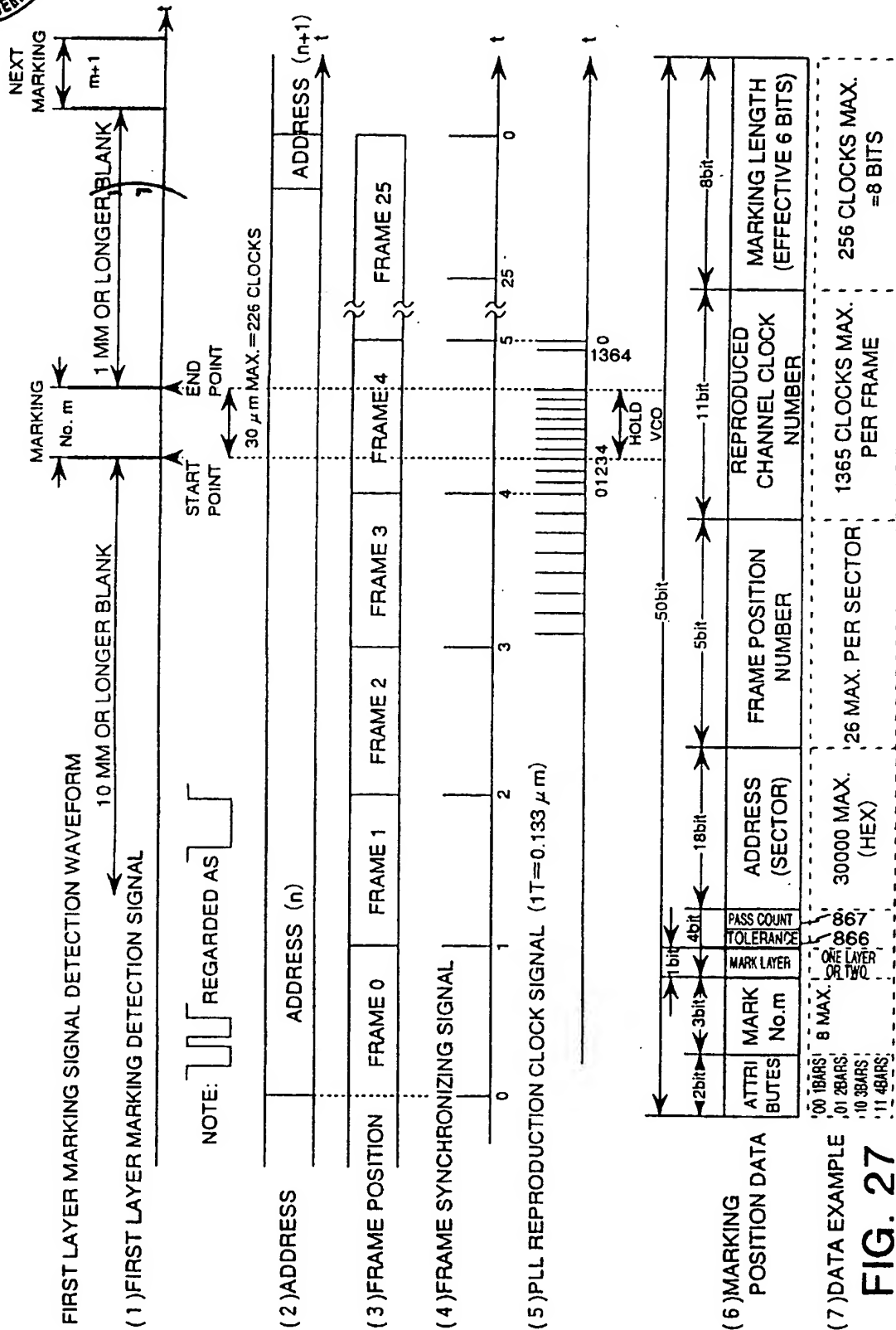
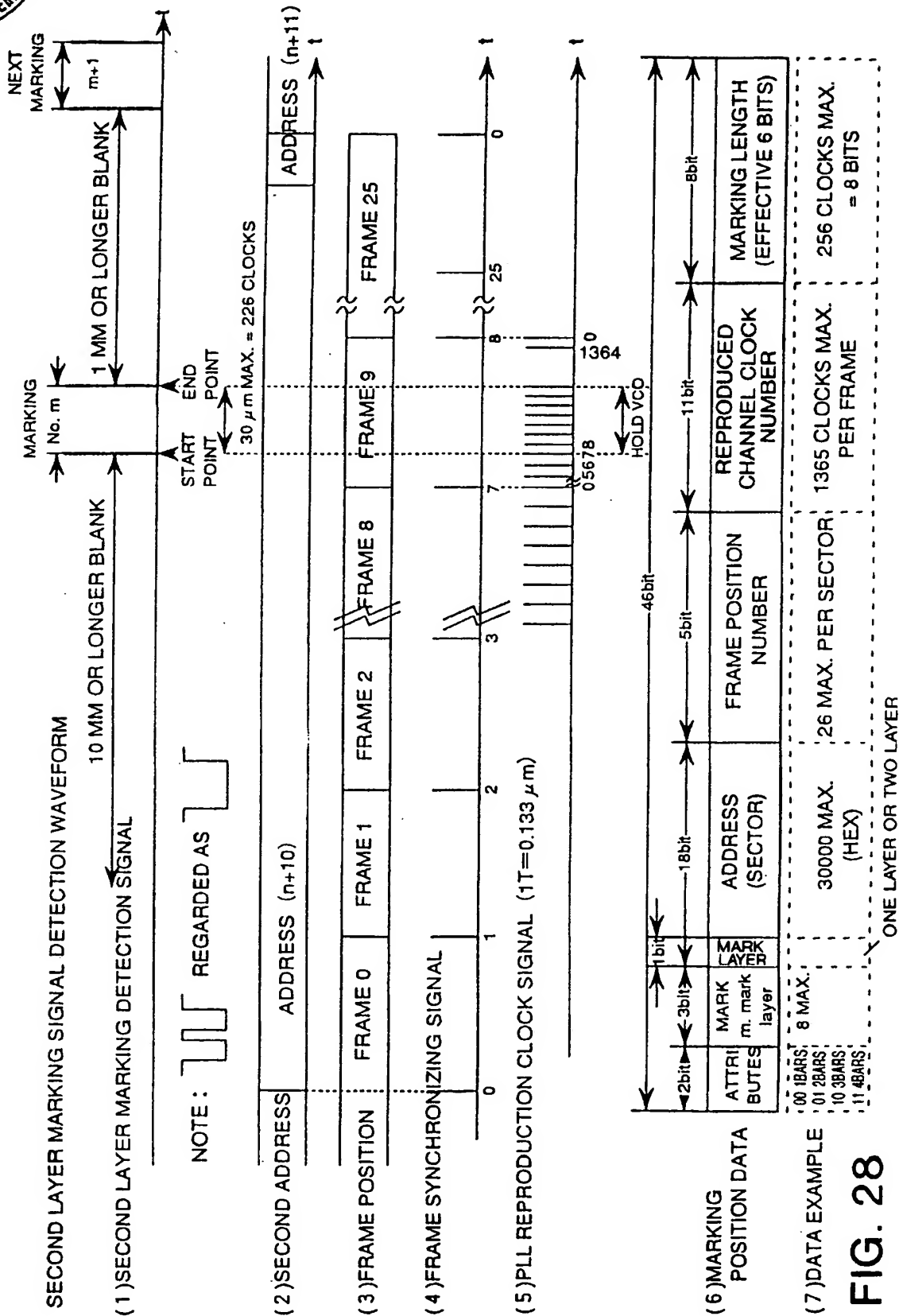


FIG. 24









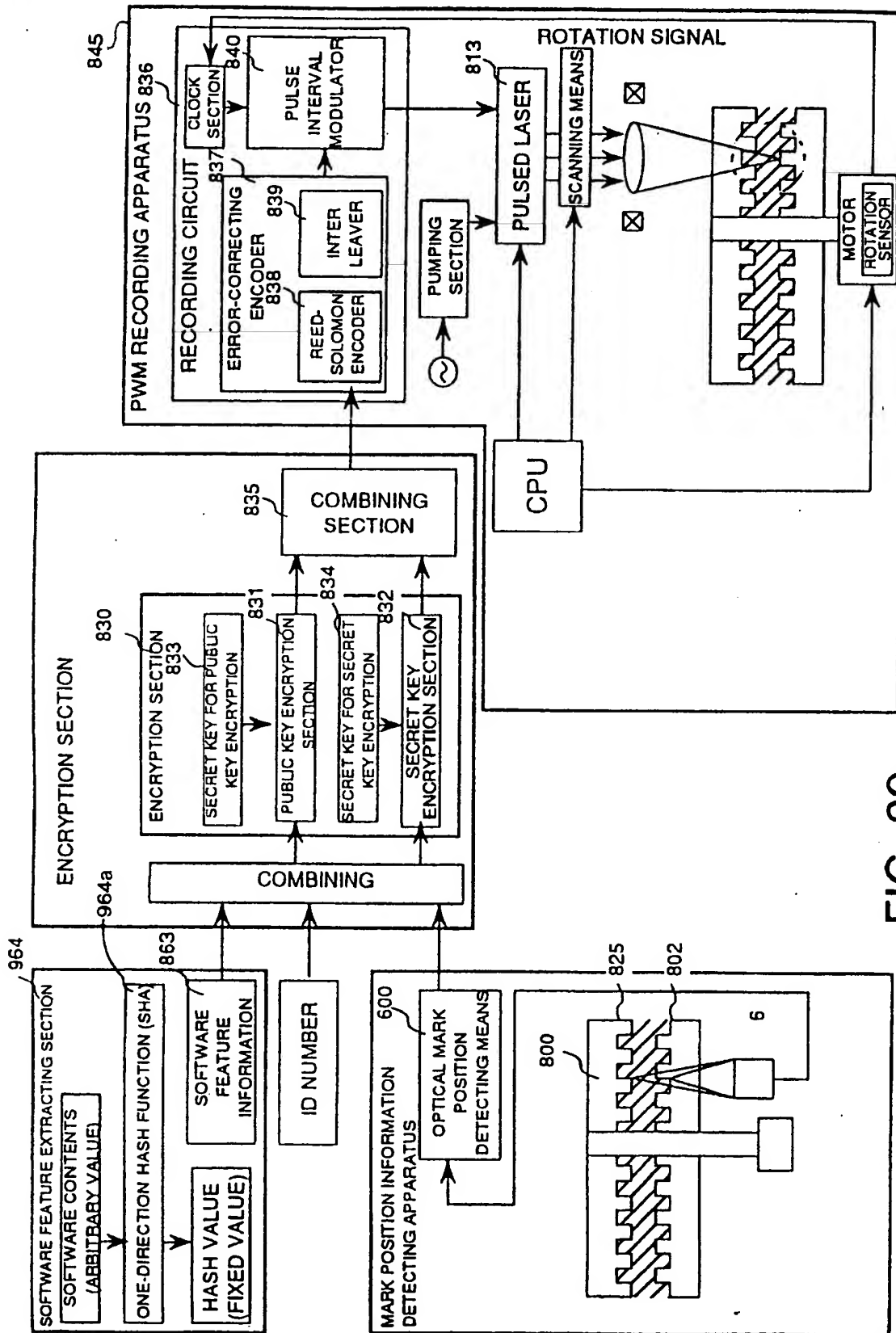
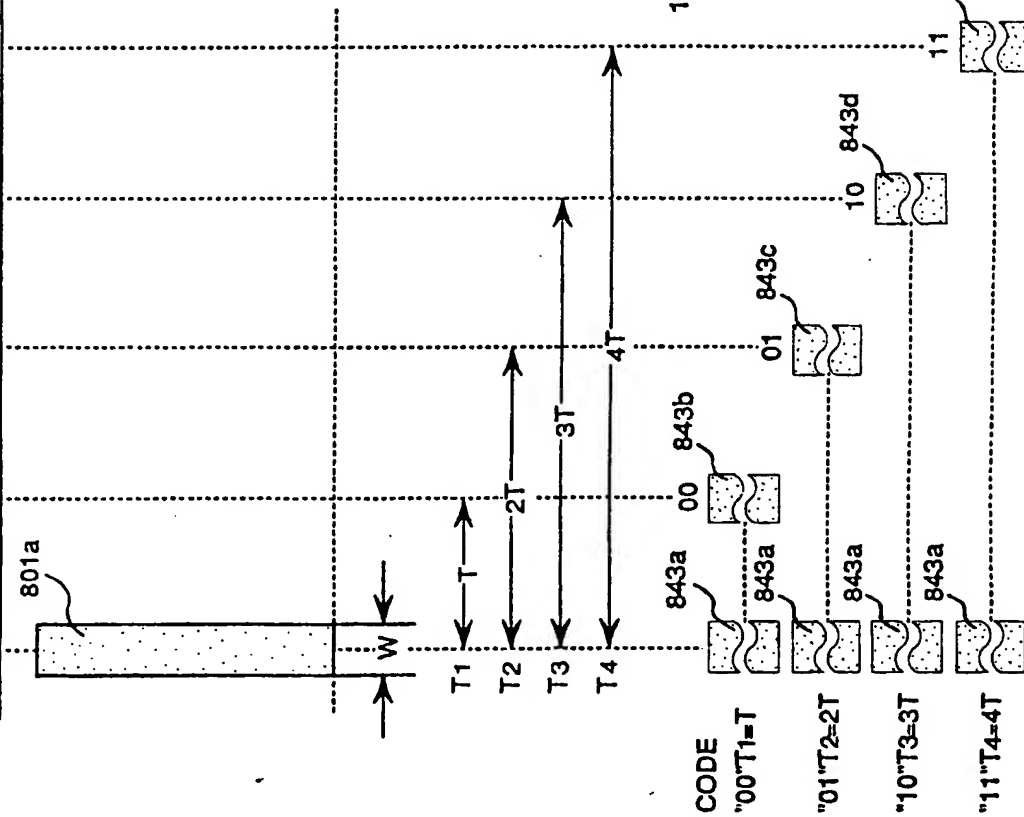


FIG. 29



CODE CLASSIFIED BY PULSE INTERVAL, 4-VALUE PWM RECORDING

CODE	00	01	10	11
------	----	----	----	----

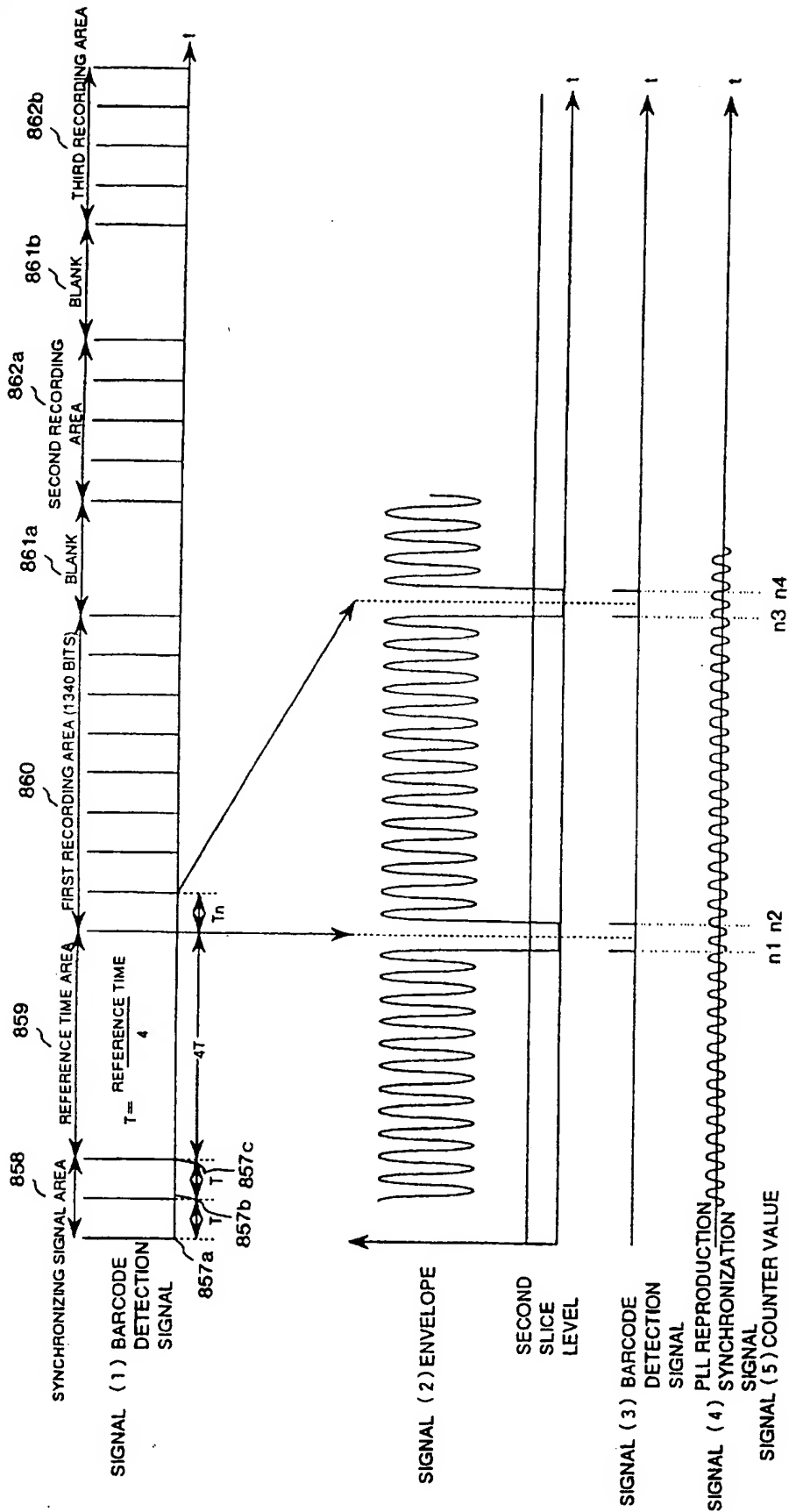


BARCODE LINE WIDTH VERSUS RECORDING DENSITY

LINE WIDTH $W$ ( $\mu\text{m}$ )	PERIOD $T$ ( $\mu\text{m}$ )	RECORDING DENSITY $\mu\text{m/bit}$	MAXIMUM RECORDING CAPACITY ONE RING	LENGTH OF 1 KBITS
1 $\mu\text{m}$	2 $\mu\text{m}$	2.55 $\mu\text{m}$	56Kbit	2.5mm
3 $\mu\text{m}$	6 $\mu\text{m}$	7.5 $\mu\text{m}$	28.2Kbit	5mm
5 $\mu\text{m}$	10 $\mu\text{m}$	12.5 $\mu\text{m}$	11.2Kbit	12.5mm
10 $\mu\text{m}$	20 $\mu\text{m}$	25 $\mu\text{m}$	5.6Kbit	25mm
20 $\mu\text{m}$	40 $\mu\text{m}$	50 $\mu\text{m}$	2.82Kbit	50mm

FIG. 30



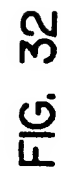
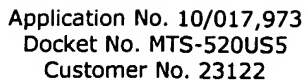


$$T_n = \text{PULSE INTERVAL} = \frac{n3+n4}{2} - \frac{n1+n2}{2}$$

SIGNAL (6) DECODED VALUE  
(PROCESSED BY  
8-BIT  
MICROCOMPUTER)

1T : 00, 2T : 01, 3T : 10, 4T : 11

FIG. 31



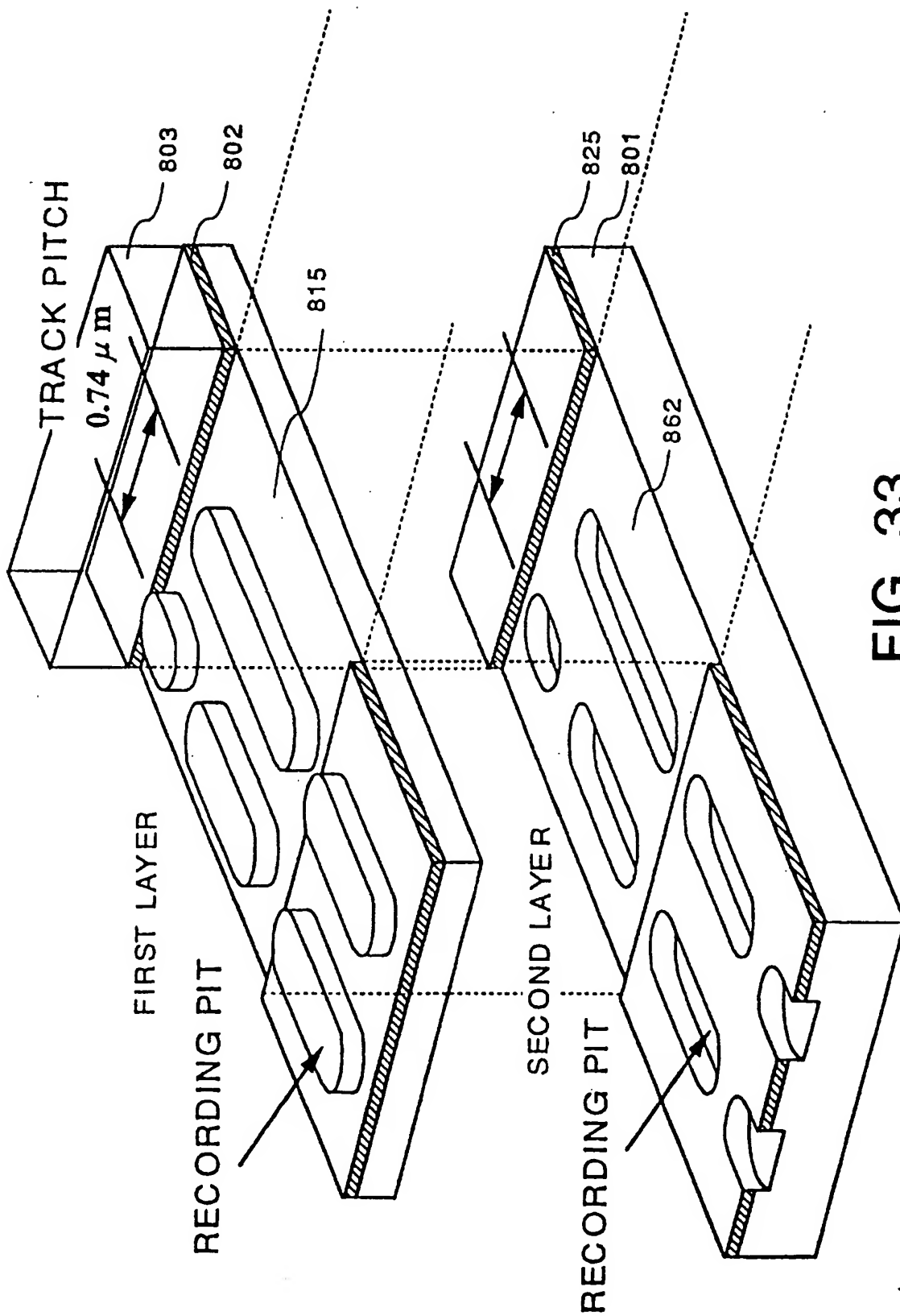
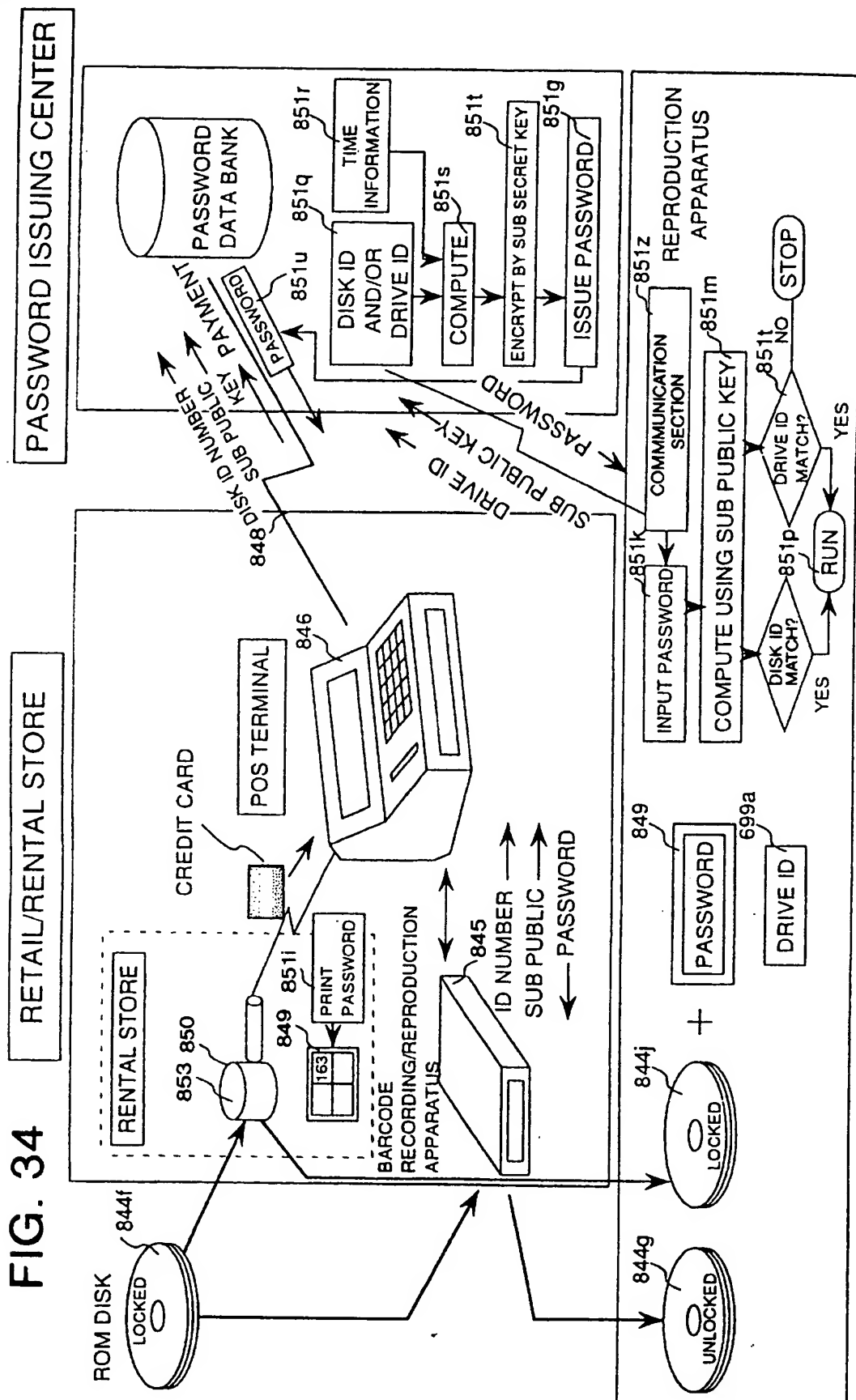


FIG. 33



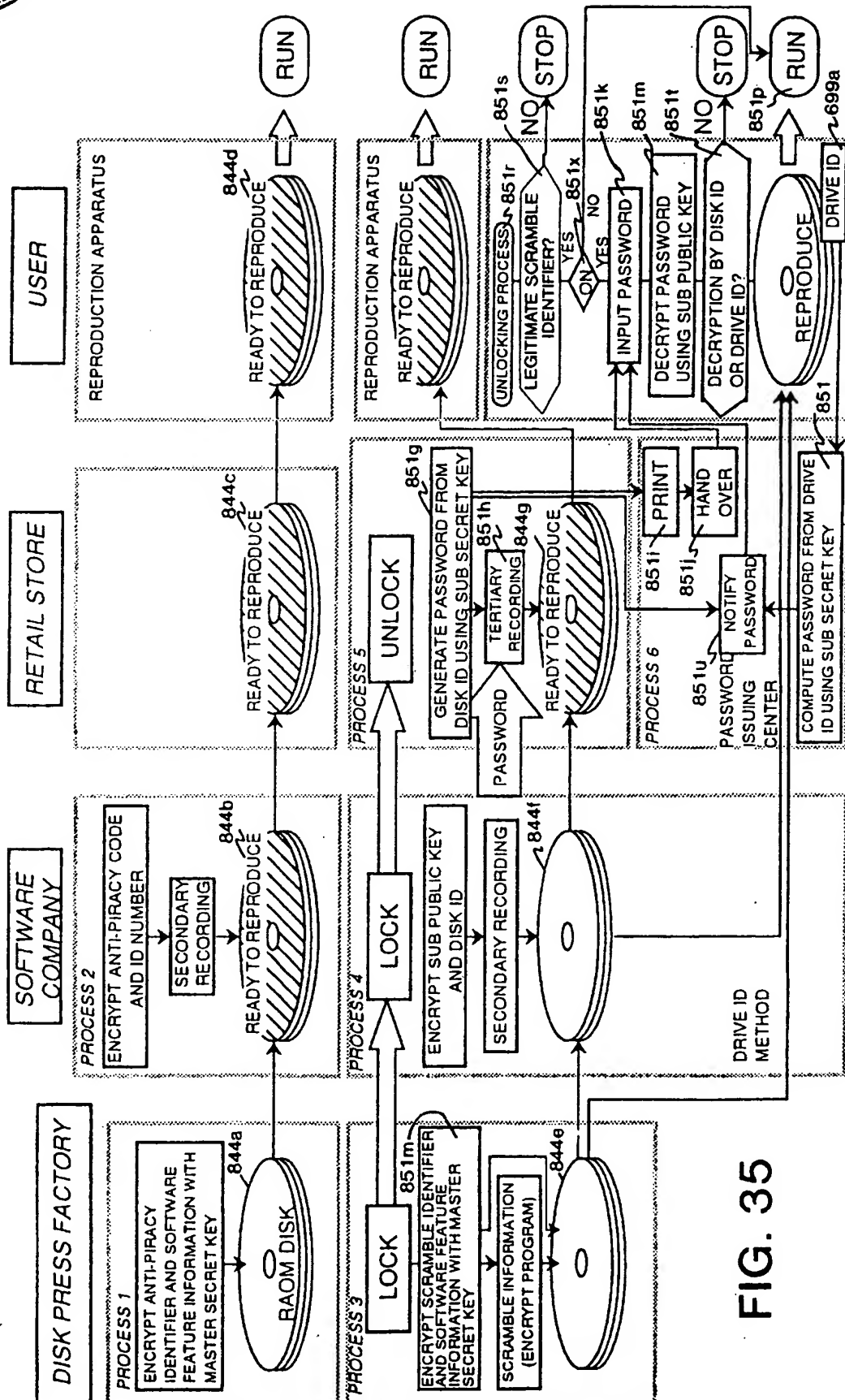


FIG. 35

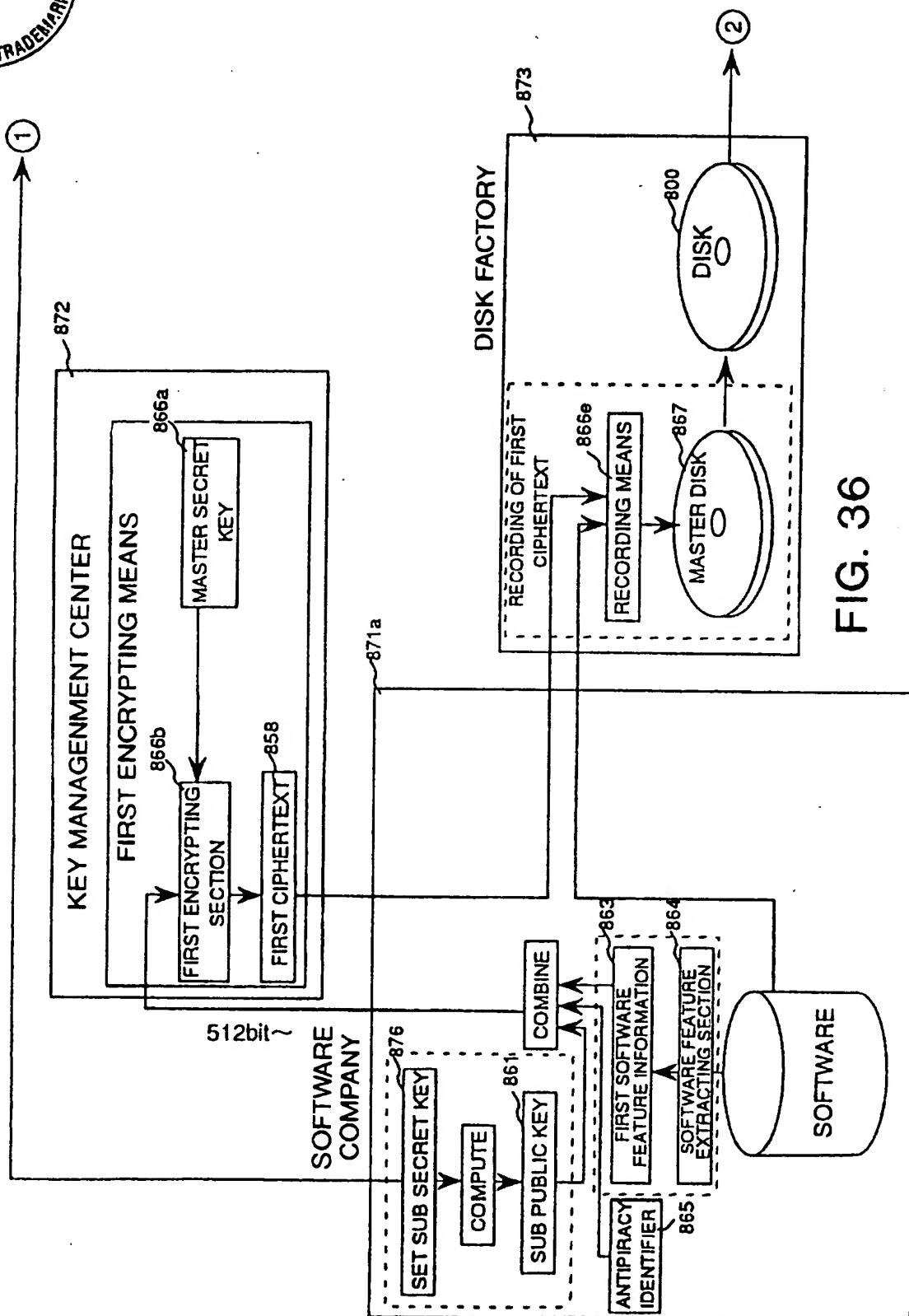


FIG. 36

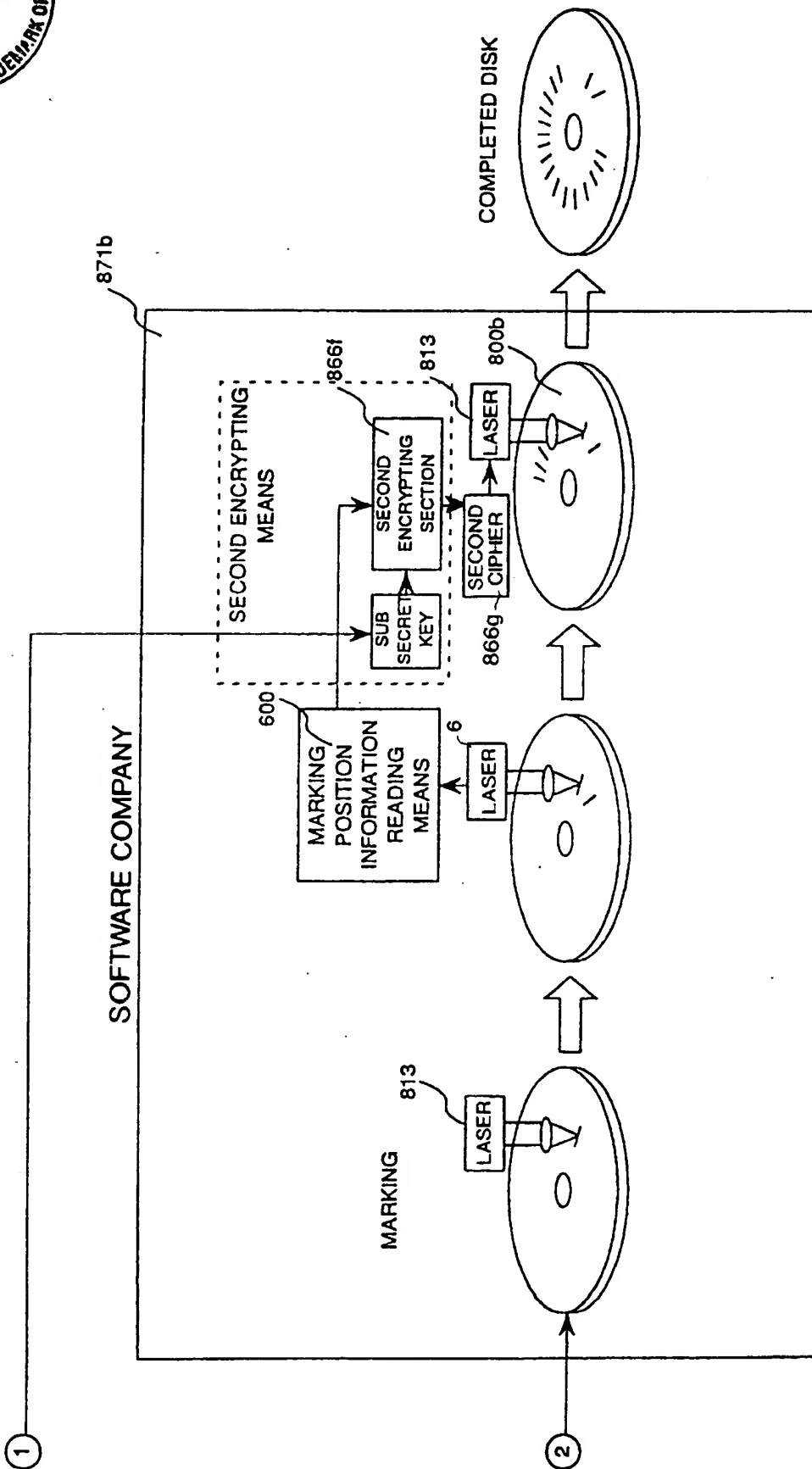


FIG. 37

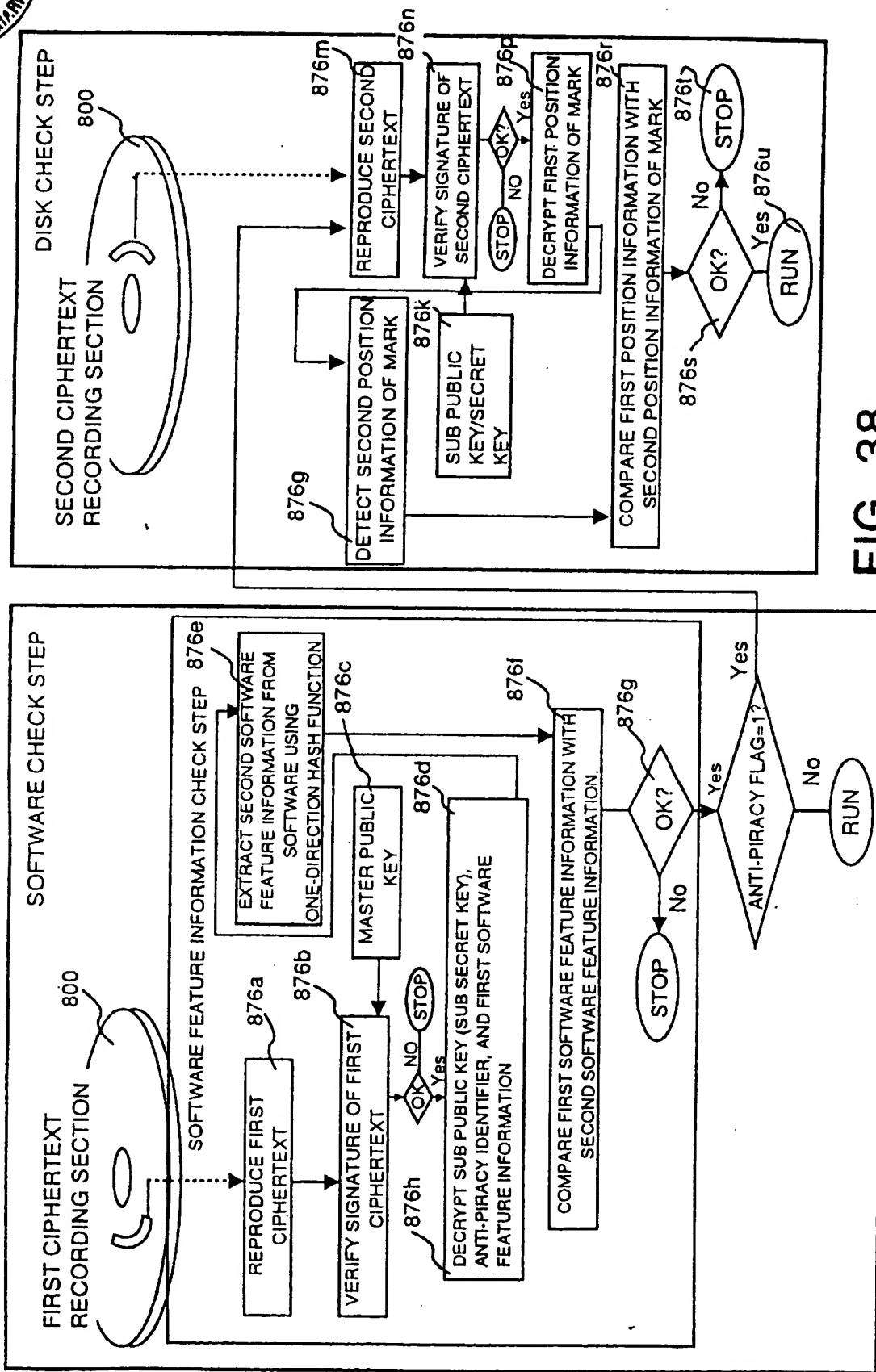
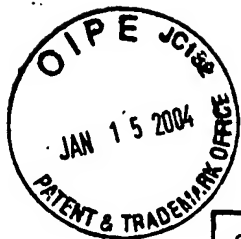
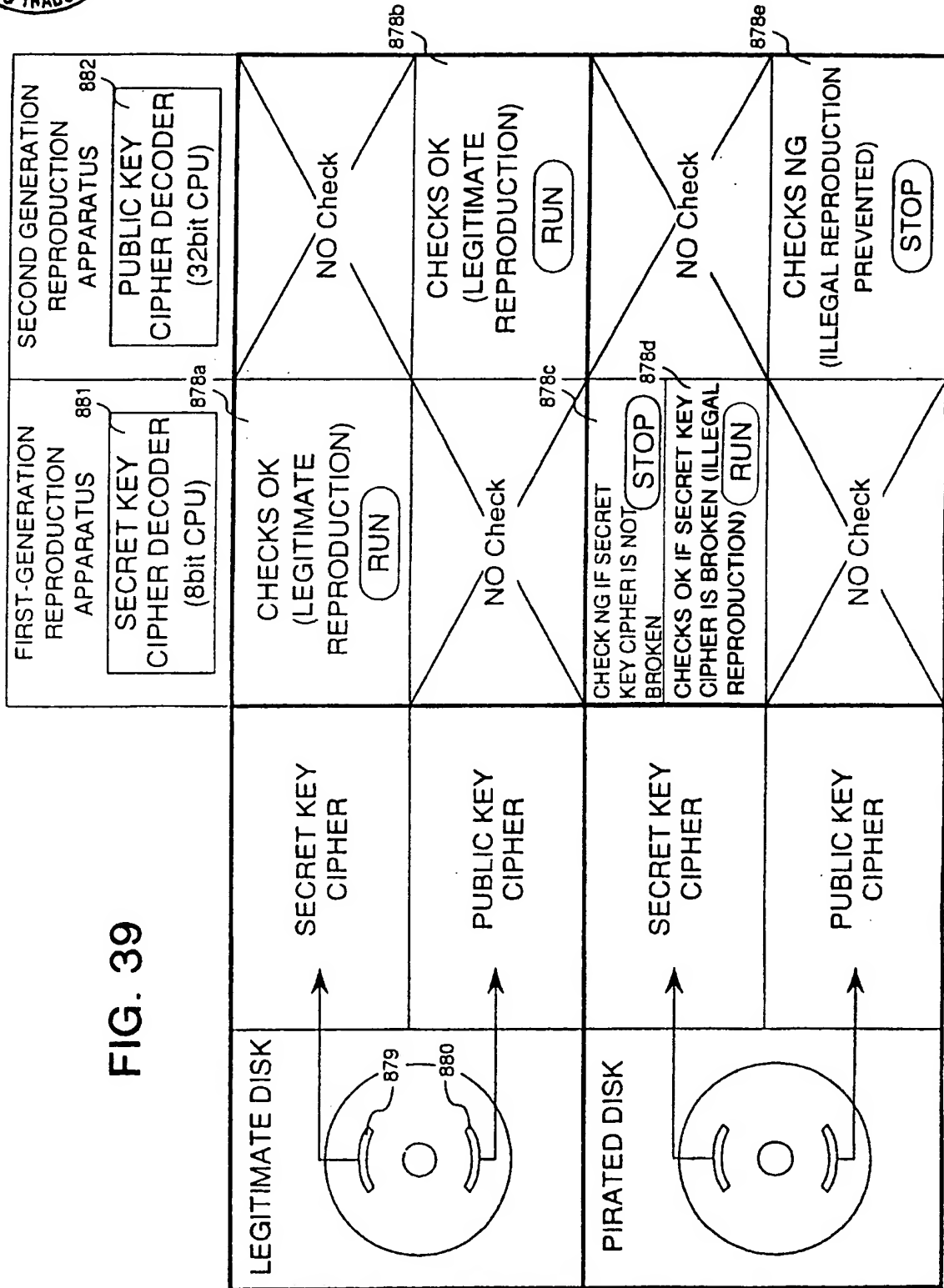


FIG. 38





FIG. 39



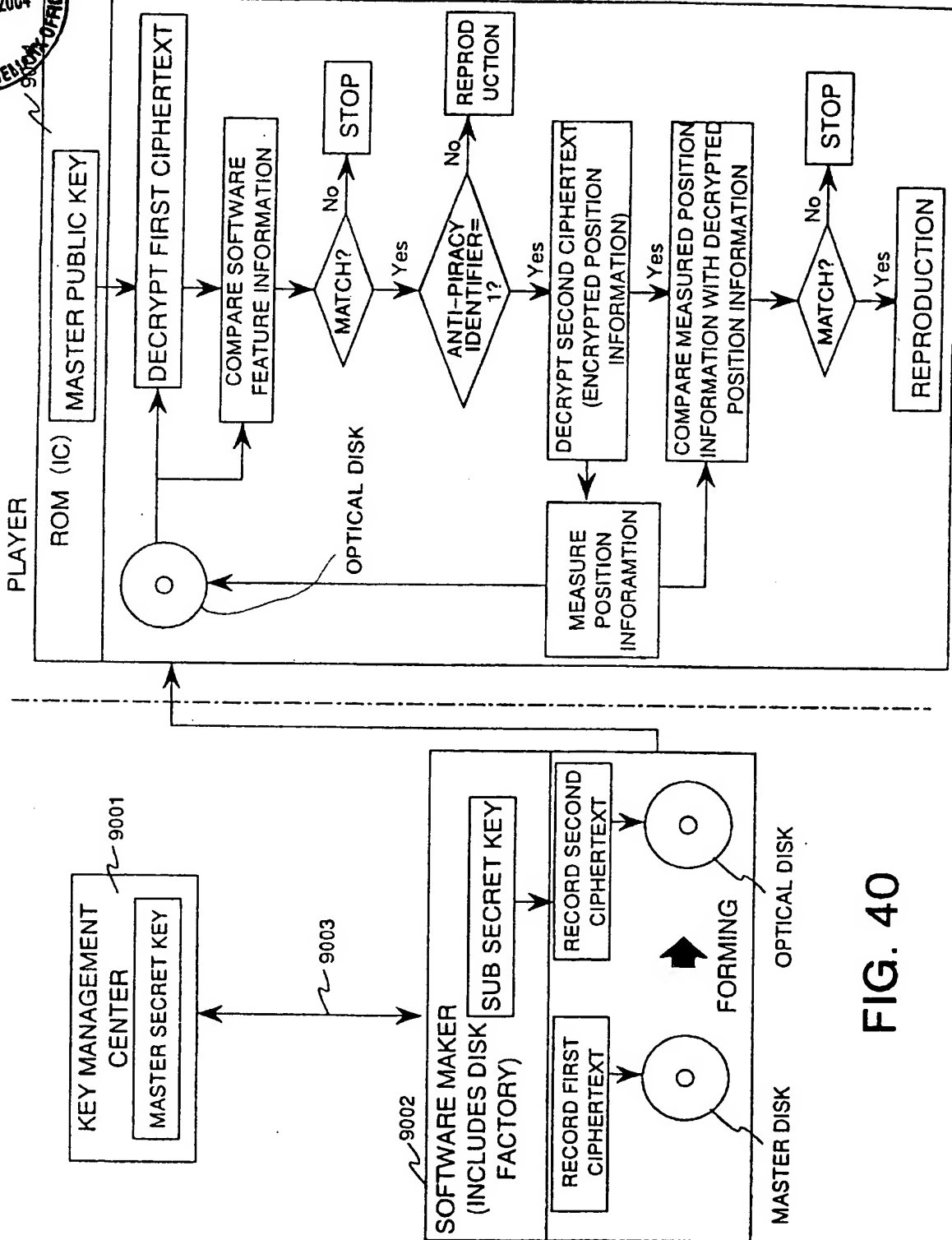
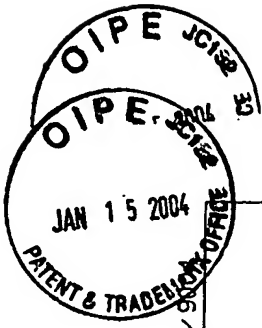


FIG. 40

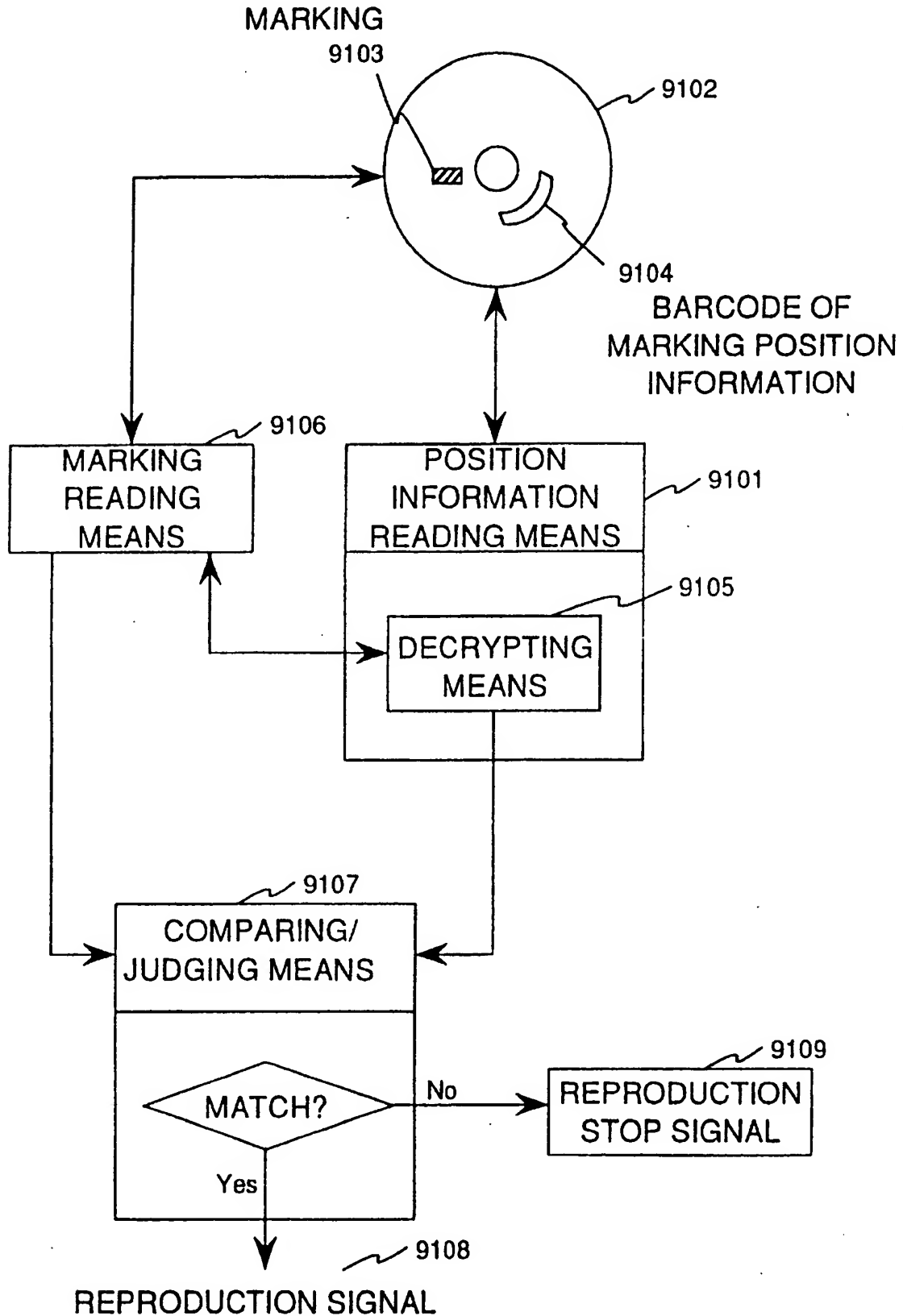


FIG. 41

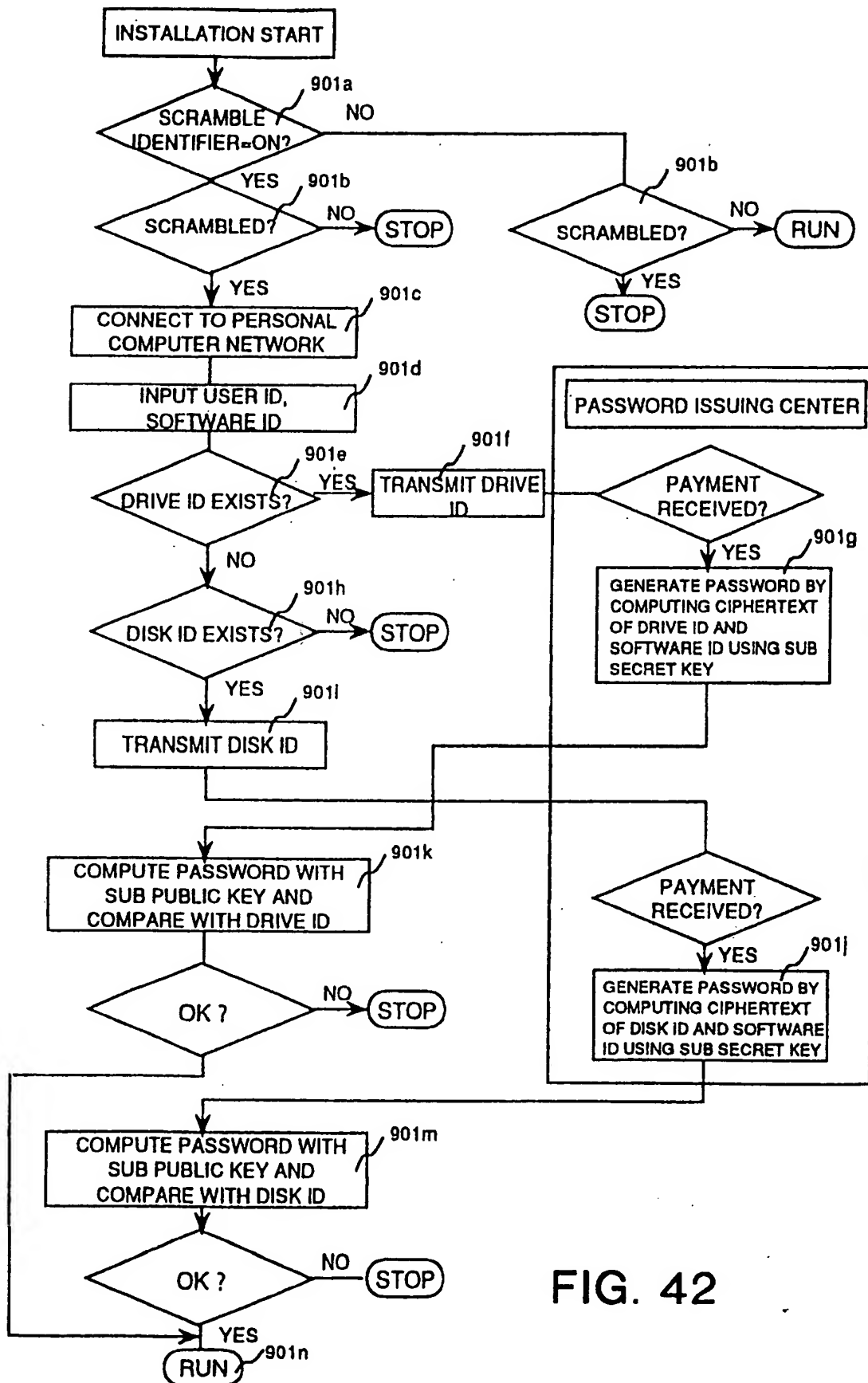


FIG. 42